TEXTILE BULLETIN

Vol. 49 DECEMBER 5, 1935 No. 14

PUBLISHED EVERY THURSDAY BY CLARK PUBLISHING COMPANY, 118 WEST FOURTH STREET, CHARLOTTE, N. C. SUBSCRIPTION $2.00 PER YEAR IN ADVANCE. ENTERED AS SECOND CLASS MAIL MATTER MARCH 2, 1911, AT POSTOFFICE, CHARLOTTE, N. C., UNDER ACT OF CONGRESS, MARCH 2, 1897.

TEXTILE BULLETIN

VOL. 49—NO. 14 DECEMBER 5, 1935

Silk and Rayon Mills Show Meagre Profits

SILK AND RAYON mills would face increased losses if working hours were further reduced or higher wages paid, it is shown in a report just issued by the Federal Trade Commission. This report, which is Section 111 of the Commission's reports on various branches of the textile industry in 1933 and 1934 followed earlier reports covering cotton and woolen mills operations.

In 1934, the report shows, profits decline and many companies showed a loss.

For purposes of general comparison of the financial results of operations for each of the seven groups of companies shown below, the following tabulation shows rates of return on textile investment for 1933 and 1934:

Group	—(†)— 1933	1934
18 stock throwing	2.51	.99
52 commission throwing	2.19	.13
58 stock weaving	7.03	.65
49 commission weaving	*1.84	*1.01
27 stock throwing and weaving	2.22	*3.19
11 commission throwing and weaving	1.21	.39
59 commission dyeing and finishing	*6.09	*3.80

*Loss. †Annual rates of return on textile investment.

In each case the classification of "stock" or "commission" was given a particular company depending on whether its operations were predominantly on one or the other of these bases. Each of these groups is discussed in more detail on the basis of data submitted for the four six-month periods in 1933 and 1934.

THROWING MILLS' LOSSES

Companies throwing own silk and rayon reported earnings on textile investment at the rate of about 5½ and 2 per cent per annum, respectively, in the first half of 1933 and the last half of 1934 but in the two intervening periods they showed small rates of loss. This group made the most unfavorable showing in the last half of 1933 in marked contrast with the cotton and woolen and worsted companies which made the best showing in this period.

Raw material cost for the stock throwing companies represented a maximum of 76.5 per cent of total manufacturing cost and 68.7 per cent of sales in the first period. Labor cost ranged from 14.4 to 19.5 per cent of the manufacturing cost. The rates of net profit or loss on sales followed the same general trend as the rates of return on textile investment. Profits were reported in the first and last periods, losses in the second and third.

Further data presented by the commission show that under given conditions outlined in the report these companies could not have reduced hours in the first period by as much as 17.5 per cent without showing a loss on sales; that even a 5 per cent reduction in hours in the last period would have resulted in eliminating almost all profits.

COMMISSION THROWSTERS

The fifty-two commission throwing companies reported net earnings at the rate of about 4 per cent per annum on textile investment in the first half of 1933 and 3.4 per cent in the corresponding period of 1934. Substantial losses were reported in the last half of 1934 while in the last half of 1933 rates of return of less than one-half of 1 per cent were reported.

Labor was the most important cost item for this group, comprising about two-thirds of total manufacturing cost and roughly from 52 to 62 per cent of net sales. Since the companies did not own the goods processed, raw material cost was practically negligible. Proportions of the sales dollar represented by profit on sales were 5.3 per cent, .1 per cent and 3.7 per cent in the first three periods. A 4.4 per cent loss on sales occurred in the last period.

Since labor represented such a large proportion of costs, comparatively small percentage decreases in hours worked would have increased costs considerably. The percentage increases in selling prices calculated by the commission to have been necessary to offset the hypothetical increases in labor costs were correspondingly large, rising to almost twenty-one per cent for a 25 per cent reduction in hours, or a 33 1-3 per cent direct wage increase.

STOCK WEAVING MILLS

Like the cotton and the woolen and worsted textile companies covered heretofore, companies weaving their own silk and rayon reported the best results of operations in the last half of 1933. On the basis of textile investment the rates of return were 2.5, 11.5, .3 and 1 per cent on an annual basis in the four successive periods. With the exception of the third period the rates of return on textile investment exceeded those based on total investment.

Raw material costs represented decreasing proportions of total manufacturing costs in successive periods, ranging from 59.8 to 52 per cent, while labor cost increased from 21.3 per cent in the first period to a high of 28.3

per cent in the last period. Other manufacturing expense (supplies, repairs, maintenance, etc.) represented about one-fifth of total manufacturing cost.

These companies reported a profit on sales of 6.4 per cent in the second period, small profits in the first and fourth periods, and a small loss in the third period. In both the first and second periods profits would have been eliminated and losses incurred by reducing hours by 7.5 per cent and 25 per cent, respectively. A reduction in hours of about seven-tenths of 1 per cent would have eliminated profits in the last period. A maximum increase of about 8.5 per cent in selling prices would have covered the increased costs due to a 25 per cent reduction in hours or corresponding direct wage increase.

Commission Weavers

For the forty-nine companies weaving silk and rayon on commission, losses on investment were reported for every period except the third. In that period, the group reported a return at the rate of 5.7 per cent per annum on their textile investment. Losses of about 2 per cent on this basis were registered in the first two periods, but in the last period the loss had increased to 7.6 per cent. The textile investment per company for this group averaged about $55,000.

Labor cost represented from 68.8 to 73.6 per cent of total manufacturing cost, and other manufacturing expense accounted for about one-fourth of total costs. Raw material cost for the group was a relatively minor item. Losses on sales at the rate of 1.7 per cent, 1.8 per cent, and 5.6 per cent were reported in the first, second and fourth periods, respectively, but a profit of 2.7 per cent was reported in the third. Due to the evtremely large proportion of labor in total costs, comparatively small percentage reductions in hours would have increased costs considerably. The price increases necessary to offset the increased costs due to the indicated reductions in hours would have been correspondingly large, rising to about 23 per cent in the last period for a 25 per cent reduction.

Combined Stock Mills

For the twenty-seven companies throwing and weaving their own silk and rayon, a return on textile investment of 5.7 per cent per annum in the second period was offset by a loss of about the same magnitude in the third. Small losses were reported in the first and last periods. The showing on the basis of total investment was more favorable than on that of textile investment in each period. Other textile income (consisting of merchandising profit or loss, rents, etc.) was an important item for these companies. Profits on sales were at the rate of 3 per cent in the last half of 1933 when the dollar volume of sales ($27,319,151) was at the highest level; but in every other period losses were reported, the maximum rate of loss of 5.2 per cent being reported for the first six months of 1934.

Raw material cost represented from 46.5 to 53.7 per cent of total manufacturing cost, and labor cost from 27 to 32.9 per cent.

A 10 per cent reduction in hours in the second period (the only period in which profits were reported) would have reduced the profits on sales to less than 0.1 per cent. It was also known that provided the market could have absorbed the same volume of goods at the higher price quotations, it might have been possible for the companies to increase their labor costs and at the same time realize the same profit or losses by increasing prices. An increase of 8 to 10 per cent in prices would have covered the increased costs due to a 25 per cent reduction in hours.

Combined Commission Mills

According to the report, this group of eleven companies earned about 3 per cent on an annual basis on their textile investment in the first period and about 1½ per cent in the third. In the other two periods, small losses were shown. Rates of return on textile investment and on total investment were practically identical. The rates of profit or loss on sales corresponded roughly with the rates of return on textile investment.

Labor cost constituted from 54.4 to 61.8 per cent of sales, the proportions increasing consistently from period to period. Other manufacturing expense represented more than one-fourth of the sales dollar in every period, while selling, administrative and general expense represented from 8.8 to 11.2 per cent.

The increase in labor costs due to a 5 per cent reduction in hours in the first period and 2.5 per cent in the third period would have eliminated profits on sales. In the other two periods, losses on sales were reported. Labor being such an important item of cost for these companies, the price increases necessary to enable the companies to offset their increased labor costs due to increasing wages directly or reducing hours would have been correspondingly large, amounting to more than 20 per cent for the largest indicated reductions in hours.

Commission Finishers

All of the dyeing and finishing companies operated predominantly on a commission basis. These companies made by far the poorest showing of any of the groups of silk and rayon companies. On the basis of textile investment, they showed losses of 3.4 per cent, 8.9 per cent, and 7.9 per cent per annum in the first, second and fourth periods, respectively. In the third period, they reported a return of approximately one-third of 1 per cent on their textile investment. The showing with respect to profits on sales was even poorer; losses were registered in every period. The rates of loss in the four successive periods were 5.0, 11.9, 1.1, and 10.3 per cent.

The total manufacturing cost was more nearly equally distributed among the three items of raw material, labor, and other manufacturing expense for this group than for any other. This group reported losses on sales in every period, consequently, increased labor costs would have resulted in increased losses.

Form New Sales Agency

Joseph W. Valentine, with Edward R. Valentine, Mathew R. Dickson, Harry M. Best, Richard G. Demuth, William C. Curtis and Alan H. West have organized a new sales agency under the name of J. W. Valentine & Co., and will open offices at 40 Worth street, New York, on January 1st.

The new agency will be sole agents for the following mills: Conestee Mills, Conestee, S. C.; Eastman Cotton Mills, Eastman, Ga.; Florence Cotton Mills, Florence, Ala.; LaFayette Cotton Mills, LaFayette, Ga.; E. M. Holt Plaid Mills, Inc., Burlington, N. C.; Pepperton Cotton Mills, Jackson, Ga.; Rushton Cotton Mills, Griffin, Ga.; Shelby Cotton Mills, Shelby, N. C.; Virginia Mills, Inc., Swepsonville, N. C.

Cotton Yarn Testing*

As An Indication of Weaving Qualities

By David Atkinson, F.I.T.

WHY do we test cotton yarns? Simply to avoid trouble later in the preparation and weaving of the yarns. A yarn may not be up to standard. It may be carded, but not combed; it may be irregular, contain excess moisture, be of too coarse counts, and so on. In fact, we test to see that we get what we are paying for. A yarn has to stand up to the strain of winding, beaming, sizing, weaving, finishing, using, and laundering. Therefore we have to test it to see if it is likely to be suitable for its job.

Using the normal testing instruments we get results on a scale, or on a dial. We take these, average them and then hope that they give us an index of the weaving quality. The *mean* of a certain number of results is taken as being a true index of, say, strength. But, by itself, such a mean may not be of much value. The *variation* that mean, however, is important.

Our results usually show the breaking load and extension, but what we really want to know is: Has the yarn any real elasticity when stretched by a moderate load? Is it pliable? What is the work done in breaking it? What is its resistance to wear?

We usually take the lea test, because it is convenient. We wrap a lea of yarn to find the counts, so why not break it to find the strength? It is quickly done and gives us some figures, which are useful for comparison. The lea has no relation to the yarn as used, but nevertheless it does give some valuable information, and the lea test should be carefully performed. The method of wrapping the lea is important if accurate results are to be obtained. The winding may be done over the nose of the cop, in which case there is very little drag, the yarn is slack, and we actually get slightly more than a lea on the wrap reel. On the other hand, we may wind so that the yarn being drawn off pulls the bobbin round. This will give more drag, the thread is tight, and the winding results in less than a lea on the reel. Too fast or too slow a winding speed will also affect the length. Four revolutions per second is recommended as a good speed.

The method of tying up the lea on the reel is also important. It may, of course, be left with two loose ends, i.e., untied, or it may have one loose end, with the final end hitched round the lea, but the best method is to tie the two ends. It is also recommended that the yarn under test be conditioned for three hours in a temperature of 70° F. with a relative humidity of 65. Three tests should be made from each of four bobbins from every case of yarn.

As regards the lea machine itself, it should, needless to say, be in good condition. It should be well calibrated, and arranged to run at a suitable speed, in a room where the temperature is between 65 and 70° F., relative humidity 70. It has been found that with a 36s Sakel yarn the breaking load and extension increased 5% as the humidity rose 10%. The speed of the machine should be such that the bottom jaw moves down at the rate of 12 in. per minute.

The rate of loading depends on the speed of the top jaw. An elastic material will have a slower rate of loading, and a soft spun yarn may show a greater extension, probably due to fibre slippage. A 100 lb. machine loads at 15 lb. per second, a 130 lb. machine at 18 lb., a 150 lb. machine at 20 lb., a 250 lb. machine at 31 lb., and a 400 lb. machine at 53 lb. per second.

In making the actual test the lea of yarn must be placed evenly on the hooks. After the machine has been started, tension is put on the yarn and after a time one or two threads break, when the dial may be noted, giving us reading (a). The machine, however, continues to register until many threads break, when the point on the dial stops and reading (b) may be taken. Now the distance between (a) and (b) may be greater than would otherwise be the case if the lea has been put on crossed or the yarn is rough, hence the importance of putting the yarn carefully on the machine. Incidentally, power driving of the lea and the wrap reel is a distinct advantage.

The results now obtained may be dealt with by averaging, giving a mean count and a mean lea breaking strain. The lea extension is difficult to get accurately, if only one individual is testing. It is frequently neglected entirely. A formula such as 188÷counts=strength in lbs. (add 5% for Egyptian yarn) may then be used to see if the yarn is up to standard. There are a number of these formulae, each of which has its followers.

The experiment, however, which is described by Morton and Pollard (*Journal of the Textile Institute*, September, 1934) is interesting as showing the value or otherwise of lea tests as an indication of weaving quality. Four distinct yarns were spun from similar cotton, making 36s ring yarn with twist constants of 3.5, 4.1, 4.5, and 5.0. The yarns were subsequently woven (at the Eccles Spinning and Manufacturing Company's mill at Patricroft) on four Northrop automatic looms, producing a 28½ in. cloth, 63×64, 36s and 40s. The cotton was American of about 1 in. staple. The test lasted 135 hours, the warp stops only being recorded. As will be seen from the accompanying table summarizing the results of the test, the lea tests of the four yarns placed them in the order 3-1-2-4, while the actual weaving test showed them to be 4-3-2-1. The yarn with the twist constant of 5.0, although apparently 12% weaker than

*In a lecture to the Preston and District Textile Managers' Association, in England, November 1st.

the 4.1 yarn, had actually only half the breakages in weaving.

RELATION BETWEEN TESTS AND WEAVING QUALITY

(Summary of Experiment by Morton and Pollard)
Warp yarn, 36s American; 1 in. staple

Twist Constant	3.5	4.1	4.5	5.0
Lea×XCounts	1,641	1,818	1,673	1,589
S. T. Strength:				
Unsized Oz.	4.94	8.11	7.98	7.8
Sized Oz.	8.7	9.2	8.85	8.94
S. T. Extension:				
Unsized in.	1.10	1.2	1.11	1.21
Sized in.	0.59	0.62	0.64	0.74
Amount of size	9.7%	12.4%	11.2%	10.6%
Breaks in weaving	154	147	118	65
Breaks per loom per hour	1.17	1.09	0.89	9.49

Let us now consider the single-thread test. The system whereby a dead weight descends and puts the yarn in tension gives valuable data, but it is really the *extension* of the yarn which is valuable, and this depends on the skill of the operator. To get the same tension each time, a tension weight may be used, but care must be taken to avoid the twist running out. It is a long and tedious business to get sufficient results for any use to be made of them. Four breaks from each of ten bobbins should be made. The Moscrop type of tester gets results very quickly, and if an extension attachment is fitted much valuable work may be done, and from the results obtained information may be gathered quickly.

In these tests the length of yarn put into the machine is important. The greater the length, the weaker will be the average. A very variable yarn will, of course, show up this feature most. The Moscrop machine breaks short lengths of yarn quickly, and thus tends to give high results, compared with longer lengths on slower-acting machines. It is said that the break of long specimens may be calculated from the short, i.e., if length is trebled, mean load fall by the mean deviation of the shorter length. The percentage extension falls the same way. (For 30 in. lengths, break is 6% less than with 12 in. lengths.) The long length tests give results more comparable with long lengths of yarn in actual process in the loom.

Referring again to the Morton and Pollard experiment we may note that even the single-thread test failed to show the best weaving yarn, giving the order 4-1-2-3 (unsized) and 4-1-3-2 (sized).

A *ballistic* test would appear to have points in its favor. Yarn in actual use in the loom is subjected to sudden strains due to beating-up, shedding, etc., in which both the strength and extension of the yarn is put to practical test. A ballistic test combines both break and extension, by breaking the yarn as the pendulum moves past the lowest point of its swing. The amount of the upward movement depends on the work done in breaking the lea. The more work, the less movement upwards. The dummy pointer indicates this on the scale. The work of rupture is about 1¼ times the pull in pounds on the lea machine, depending on the extensibility of the threads and the vagaries of the lea test. Some single-thread tests compared with ballistic tests on the same yarn have shown as follows:

	Break in oz.	Extension %	Ballistic Work
Grey	4.84	4.17	111
Dyed	5.63	3.21	98
Difference	+0.79	−0.96	−13

Note the increase in break and the decrease in extension. The yarn processed badly. It seemed stronger in the single-thread test, but the ballistic test showed it up.

Why do threads break in weaving? An analysis of yarn breakages in the loom is most interesting. In the experiment previously referred to the following figures were obtained:

Yarn Twist Constant	3.5	4.1	4.5	5.0	Total	% of Grand Total
Lumps	17	12	9	0	38	7.8
Snarls	4	7	6	7	24	5.0
Knots	4	6	6	0	16	3.3
Soft places	14	5	8	4	31	6.4
Broken on beam	3	15	7	1	26	5.4
Taped ends	9	9	8	7	33	6.8
Unaccounted for	103	93	74	46	318	65.3
Grand total					484	100.0

Thus yarn faults only caused about 35% of the breakages. The remainder were due to the various causes incidental to weaving, such as broken healds, shuttle splinters, etc., which are outside the range of this paper.

It would appear that the testing of yarn before winding should comprise (a) a visual test, to discover faults such as the above; and (b) some breaking test—lea, single-thread or ballistic—in which extension plays a part in the ultimate figure. Such a test might be the *Constant Winding Test.*

Wind, say, 1,000 yards of the yarn on to a black drum, under tension. This tension should be greater than that used in mill practice, in order to get quite a number of breaks in the length, say, 10 to 40 breaks. Increase in tension will increase the number of breaks. By this means:

(1) Weak places would be found, which would be missed (probably) in the lea or single-thread test. Many breaks at low tension are spinners' piecings. Of 600 piecings made on the ring frame 89% broke down at the piecings with a 7-hank tension. Such piecings would be found by winding as above.

(2) The winding would take out extensibility which would be lost in winding, beaming, etc., and leave the yarn more like it would be in practice in weaving (except for sizing).

(3) The yarn could be examined on the black drum for lumps, snarls, knots, soft places, etc., which may "come down" in weaving.

(4) The yarn could then be tested on the single-thread tester.

From the figures obtained, much valuable information would result, and if properly classified would be very useful. Two simple methods are:

(1) Percentage Irregularity below 10%—yarn very-uniform
" " " 15% yarn uniform
" " above 15% yarn irregular

(2) Weakness Percentage:
"Percentage of results below ¾ mean strength of threads," e.g., 12 tests of which three results below 6 oz. (¾ mean) 3÷12×= 25% weakness. This kind of figure should indicate the working possibilities of a yarn.

Clemson Textile Annex To Be Built

Clemson, S. C.—An addition to the Clemson Textile Building, designed to house the U. S. Government spinning laboratory at Clemson and offer more classroom space for the college, was started early this week. It is estimated that the 50 by 24-foot two-story annex will be completed at a total cost of approximately $10,000.

Association Files Brief Against Processing Tax

The National Association of Cotton Manufacturers, with headquarters in Boston, has filed a brief in the Supreme Court of the United States in which it declares that the cotton processing tax is unconstitutional. The Association filed its brief in connection with the Hoosac Mills, which had carried its fight against the tax to the highest court.

Summarizing, the brief asked: "Is it too much to say that the issue in this case involves the fundamental right of the States to control their internal affairs, and the question whether or not the Constitution gives Congress power virtually to destroy this authority.

The greatest part of the 225-page brief discusses the "general welfare clause" of the Constitution, under which the Government asserts it has power to carry out the AAA. The brief contends the processing taxes invalid on four counts:

1. Under the strict Madisonian interpretation of the welfare clause "since the United States is not authorized to legislate or deal with agriculture, it is not within the 'general welfare of the United States'; and Congress, therefore, cannot levy taxes for the purpose of any such plan as the present concerned with agriculture."

2. Under the broader Hamiltonian interpretation even if "Congress can levy taxes to carry out its granted powers and also appropriate tax money for other purposes in respect to which it cannot legislate, . . . Congress can not use this mere right to appropriate . . . to bring about the regulation of agriculture which by the express terms of the Constitution it is forbidden to regulate."

3. "The right of Congress to authorize the creation of banks which can make agricultural loans and loans to industry does not empower it to regulate all agriculture or all industry."

4. "Taxes imposed on cotton manufacturers to be paid to cotton growers not to induce them to perform a service to the public but for their own benefit violate the due process of law provision of the fifth amendment."

The brief of the association, which is composed of a majority of the cotton mills in the Northeastern States including some of the largest mills in the country, also said:

"The contention that the United States can directly regulate agriculture in order to enable the Federal land banks, joint stock land banks and other similar agencies of the United States to collect farm mortgages which they hold requires little discussion.

"If this contention is correct, it means that the United States, in order to enable the National banks to collect on their loans, which have been made to practically every industry in the country, can regulate all industry and thus destroy the entire basis on which the Constitution is founded."

Marion Mill Sold

Marion, S. C.—The Marion Manufacturing Company, a cotton mill here, was sold to F. F. Watson, a representative of Watson and Watson of Knoxville, Tenn. This mill was established in 1905, the stockholders being practically all Marion men.

The mill operated steadily up until about three years ago, when poor business conditions forced it to close down. Some time ago it went into bankruptcy proceedings, and was recently sold at public auction to the Knoxville firm for $15,100.

The property consists of the mill itself, 19 acres of land and 36 dwellings for the mill workers.

A representative of the new owner is now in the city, looking over the machinery and other property, but it is not known whether the mill will be put back in operation or not.

Alemite Distributor

The Alemite Company, of Charlotte, which is controlled by the Shaw Distributing Company, recently moved its warehouses from Columbia to Charlotte. The company handles the distribution of Alemite lubricants and lubricating equipment in the Piedmont section of North Carolina. R. H. Mickey is in charge of industrial sales.

HICKORY, N. C.—John D. Brooks, in an action against B. L. Marlowe of Hickory over the profits from the sale of the Brooklowe Hosiery Mills of Hickory, had consented to judgment of non-suit in the case and Marlowe paid to Brooks $1,200 as his part of the profits. The plaintiff alleged that he was a partner with the defendant in the hosiery mill business and that the defendant, Marlowe, sold the business and failed to share the profits with him.

Methods of Testing and Tolerances For Rayon

American Testing Society's Tentative Standards

THE methods of testing and tolerances suggested by the A. S. T. M. apply to the various types of rayon in the form of filaments or yarn, i.e., Nitrocellulose (Chardonnet), Viscose, Cuprammonium, and Cellulose Acetate. *Rayon* is defined as a generic term for filaments made from various solutions of modified cellulose by pressing or drawing the cellulose solution through an orifice, and solidifying it in the form of a filament. *Rayon Yarns* are yarns composed of more than one continuous rayon filament. *Spun Rayon* is yarn made from cut filaments which are drawn out and twisted into yarn by the usual processes (cotton, worsted or spun-silk spinning systems).

The various rayons are classified as follows:

(a) *Nitrocellulose*—Filaments composed of a regenerated or denitrated cellulose which has been coagulated or solidified from a solution of nitrated cellulose.

(b) *Viscose Rayon*—Filaments composed of a regenerated cellulose which has been coagulated or solidified from a solution of cellulose xanthate.

(c) *Cuprammonium Rayon*—Filaments composed of a regenerated cellulose which has been coagulated or solidified from a solution of cellulose in ammoniacal copper oxide.

(d) *Cellulose-Acetate Rayon*—Filaments composed of an acetic ester of cellulose which has been coagulated or solidified from its solution.

Denier (Rayon Yarn)—The denier of a rayon yarn is the weight in grams of 9,000 meters.

Number (Spun Rayon Yarn)—Spun rayon yarns are numbered on the basis of the system by which they are spun.

Tolerances

Tolerances—Tolerances shall be the limits within which a textile must come in its specified characteristics in order that it shall constitute a good delivery on contract.

Denier of Rayon Yarn—(a) The average denier of the rayon yarn, either bleached or unbleached, in each skein, tube, spool, cop, pirn ,or cone of rayon as supplied by the seller, as found by test, shall not vary above or below the specified denier more than:

10% for denier finer than 150, and
8% for 150 denier or coarser.

(b) The average denier of the rayon yarn in the singles, either bleached or unbleached, in each case of skeins, tubes, spools, cops, pirns, cones, or a beam warp as found by test shall not vary above or below the specified denier more than:

5% for denier finer than 150, and
4% for 150 denier or coarser.

Number of Spun Rayon Yarn.—The average number of the spun rayon yarn in the singles, either bleached or unbleached, in each case of skeins, tubes, spools, cops, pirns, cones, or a beam warp, as found by test, shall not vary more than 5% above or below the specified number. Spun rayon yarns are numbered on the basis of the system by which they are spun.

Tensile Strength—(a) The average tensile strength of the rayon yarn in each case of skeins, tubes, spools, cops, pirns, cones, or a beam warp in the singles, or plied, either bleached or unbleached, as found by test, shall not be less than the specified tensile strength.

(b) Ultimate tensile strength, or tensile strength at the highest yield point, may be specified.

Twist—The average twist of the rayon yarn in each case of skeins, tubes, spools, cops, pirns, cones, or a beam warp shall not vary beyond the following specified limits:

Turns per inch	Permissible Variations
Under 7½	25%
7½ to 10	15%
Over 10	5%

METHODS OF TESTING

Identification

General—(a) The following procedure assumes that the rayon is known to be one of the four common types of rayon already defined.

(b) Three methods of identification are given, depending on physical properties, chemical properties, and optical properties. In general, no one method is completely reliable, particularly when distinguishing between cuprammonium and viscose rayon.

(c) While not essential, it is desirable that the analyst should have available a series of authentic samples of the different types of rayon yarn. These samples should be from various sources and should be kept as nearly up to date as possible.

Preparation of Sample—These methods are intended for rayon which is substantially free from color imparted by dyestuffs or colored pigments either before or after spinning, is in either bleached or unbleached state (Note), and is free from oil, finish or other foreign substances. If any of the latter are present, they shall be removed from the sample by digesting successively with the following solvents:

(a) Distilled water at a temperature of 158-176° F. (70-80° C.) for fifteen minutes.

(b) Denatured alcohol at room temperature for five minutes.

(c) Diethyl ether (sulphuric ether) at room temperature for five minutes.

The sample shall be wrung out after each immersion in order to remove the excess of the solvent before transferring it to the next solvent. Finally, the sample shall be allowed to dry at room temperature.

(Continued on Page 12)

ACHILLE BORGO
Managing Director

CONSTANTINO LOPEZ
Assistant Manager

Open the year round

The SEVILLA BILTMORE HAVANA

For information, rates, reservations, inquire of any travel agent . . or address Sevilla-Biltmore Hotel, Havana, Cuba. Cable address: "Sevilla"

HAVANA'S SEVILLA-BILTMORE—the most celebrated hotel in the West Indies—is open again! Always a favorite hostelry of distinguished travelers, the Sevilla-Biltmore is gayer and more charming this year than ever before . . . with its smart, new decorations throughout, improvements in modern comforts and structural changes. Perhaps you remember the former Sevilla bar. And the famous Patio, where gathered the travel-wise from all parts of the world. These features have been expanded into even more ample luxuries. Once more Havana's brilliant social life is dominated by Sevilla-Biltmore gaiety.

Under its new policy and regime (with the renowned host, Achille Borgo, as managing director) the hotel will remain open throughout the year. While cuisine and appointments are dominantly French, the Sevilla-Biltmore is hospitably American in its comforts, conveniences and—yes—cocktails. Of course the courteous staff speaks English. An innovation in service is a special department to handle all technical and travel details for its guests—such as attending to luggage and customs inspections, entry of personal cars, arrangements of parties beyond the hotel, tours of the island and any other personal service desired.

It's still the famous Sevilla-Biltmore—tallest building on the Prado in the heart of Havana's beautiful downtown area—but it has many new attractions to enhance its old charm. With the Sevilla-Biltmore's reopening, Cuba is again really Cuba!

Personal News

Ross Mavity has been appointed superintendent of the Richmond Hosiery Mills, Rossville, Ga.

Lewis Hines, an overseer in the Excelsior Mills, Union, S .C., was seriously injured in an automobile accident near here.

Jesse M. Jackson is now efficiency overseer, Columbus Manufacturing Company, Columbus, Ga.

Arthur Holt has been transferred from efficiency department to second hand spinning, Columbus Manufacturing Company, Columbus, Ga.

Sterling Estes has been promoted from fixer to second hand weaving, Columbus Manufacturing Company, Columbus, Ga.

Aaron Taylor has been transferred from second hand weaving to a similar position in spinning room, Columbus Manufacturing Company, Columbus, Ga.

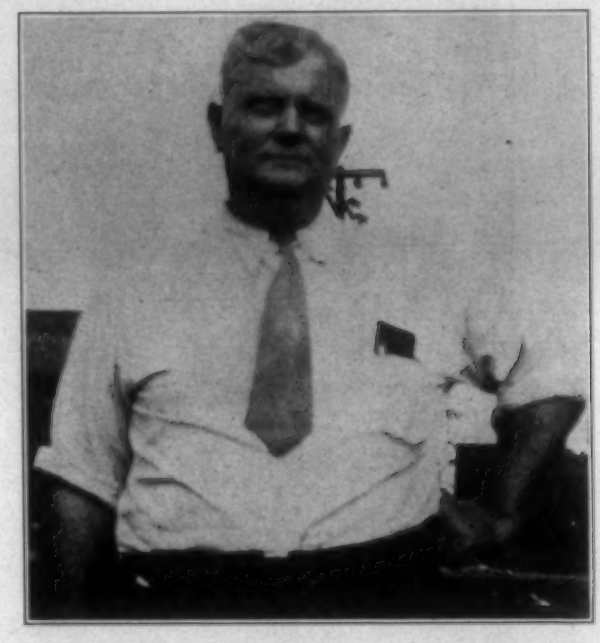
Luther B. Hodges, who has been general manager of the Carolina Cotton and Woolen Mills, Spray, N. C., has been made general manager of all of the mills in the South that are operated by the Marshall Field interests.

John R. Roy, member of the firm of B. S. Roy & Son Co., of Worcester, Mass., well known manufacturers of textile grinding machinery, recently opened a Southern office for his company in Greenville, S. C. The offices are at 21 Byrd Boulevard.

Waite C. Hamrick, Jr., has been elected president of the Hamrick group of mills at Gaffney and Blacksburg. He succeeds his father, the late Dr. W. C. Hamrick, founder of the mills. Mr. Hamrick has been treasurer of the mills for some time. The plants include Limestone, Hamrick, Alma and Musgrove at Gaffney and Broad River Mills, Blacksburg.

People Worth Knowing

A series of pictures, picked up here and there, by mem bers of the staff of the Textile Bulletin.



T. W. Johnson, superintendent of Scottdale Mills, Scottdale, Ga., has been with this mill 18 years. He held the position of overseer spinning 17 years, and was promoted to superintendent. His wife was Miss Florence Canady, of Covington. They have six children. Mr. Johnson is a member of the Presbyterian Church, and belongs to one fraternal order, the Red Men.

Walker Wright has resigned his position with the office forces of the F. W. Poe Manufacturing Company, where he served for more than 20 years. He is now engaged in the cotton waste business.

George B. Moore has been appointed superintendent of the Whitney Manufacturing Company, Spartanburg, S. C. He was formerly superintendent of the Gainesville Cotton Mills, Gainesville, Ga.

Friends of Hunter Marshall, Jr., secretary of the North Carolina Cotton Manufacturers' Association, will learn with much regret of the death of his mother. She died suddenly Thanksgiving afternoon at Mr. Marshall's home in Charlotte.

C. W. Gaddy, general manager of Wiscassett Mills Company, with G. E. Biddix, member of the Albemarle police force, brought home from a hunt recently an enormous American gray eagle which was shot while they were out to get squirrels. The eagle chased their dog in a running fight and was getting the best of the canine when the hunters opened fire on the king of the air and let him have the contents of both barrels. The huge bird measured seven feet from tip to tip of wings.

Boy Missing

Charley Baldwin, of Woodruff, S. C., is anxious for information concerning his son, Wm. A. Baldwin, who disappeared from Woodruff early in October. The boy

is 16 years old, 5 feet 5 inches tall, has blue eyes, light brown bushy hair and weighs 116. He works in the weave room. Mr. Baldwin offers a reward for information about the boy.

OBITUARY

CHARLES A. ENSIGN

Forsyth, Ga.—Charles A. Ensign, 81, died here at the home of his son, O. P. Ensign. The funeral was held Saturday at the First Baptist Church, Rev. H. D. Warnock officating. The body will be placed in the family mausoleum in Forsyth Cemetery.

He is survived by three children, Mrs. William A. Moncure, Washington; C. W. Ensign, New York City; O. P. Ensign, Forsyth, and five grandchildren. He was a native of Monroe County, president of the Ensign Cotton Mills and prominent in the commercial and civic life here. He was for many years a trustee of Bessie Tift College. His wife was the former Miss Nancy Ella Proctor, who died several years ago.

CHARLES H. MURRAY

Griffin, Ga.—Charles H. Murray, secretary of the Highland Mills and for many years identified with the civic growth of Griffin, fell dead Sunday afternoon while playing golf on the Griffin Country Club course.

Mr. Murray was formerly connected with the Georgia-Kincaid Mills and was widely known throughout the State. He is survived by his wife, the former Miss Bessie Brawner. Funeral services were held here Tuesday.

MILES HOFFMAN

Mt. Holly, N. C.—Miles Pegram Hoffman, 65, died at his home here. He had been in declining health for several years.

Mr. Hoffman was born in Charlotte, the son of the late William H. Hoffman and Mina Jenkins Hoffman, of Gastonia. Mr. Hoffman was educated at Wake Forest College and his first work was in the banking business in Birmingham, Ala. He later went into business with his brother, E. J. Hoffman. They formed a yarn merchandising business at Philadelphia, Pa., which they conducted for several years. Mr. Hoffman retired in 1923 and went to live in Atlantic City. Five years ago he moved to Mt. Holly to make his home. He was a member of the Episcopal Church.

JOHN P. LONG

Kings Mountain, N. C.—John P. Long, 66, well known citizen of Kings Mountain, died at his home here following an illness of about a year. Mr. Long was formerly superintendent of the Kings Mountain Manufacturing Company here but had more recently been employed by the Neisler Mill in the capacity of mechanic.

Mr. Long is survived by one son, Ben Long, who makes his home here. Several other children died some years ago. A number of grandchildren survive. Mrs. Long died 12 years ago.

S. H. DUNSON

LaGrange, Ga.—Sanford H. Dunson, who was a director of Dunson Mills and the LaGrange Bank & Trust Co. at one time and also connected with J. E. Dunson Bros. Company for several years in LaGrange, Chipley and Hogansville, died at his residence near here.

Methods of Testing and Tolerances For Rayon

(*Continued from Page 8*)

Physical Tests—(a) If sufficient sample of rayon yarn is available, the denier and the filament count shall be determined. These values shall be compared with the various numbers offered for sale commercially by the different producing rayon companies. Occasionally, as in the case of very fine denier, this will definitely determine the type of rayon yarn. At other times, it merely limits the number of possibilities and, on occasion, is of no assistance.

(b) A few strands of the sample shall be twisted and the mass brought as close as possible to a flame without permitting it to burn. Cellulose-acetate rayon is thermoplastic and will soften or melt, depending on the temperature. In the latter case it forms a hard ball. Nitrocellulose, viscose, and cuprammonium rayon do not fuse when heated.

Chemical Examination (a) to Identify Cellulose-Acetate Rayon: Treat a few strands of the sample with c.p. acetone. Cellulose-acetate rayon dissolves.

Treat a few strands of the sample with a boiling solution of acetic acid (40 g. of glacial acetic acid with 60 g. of distilled water). Cellulose-acetate rayon dissolves.

Nitrocellulose and cuprammonium and viscose rayon do not dissolve in either of the two solvents mentioned above. Partially saponified or hydrolyzed cellulose-acetate rayon partly dissolves in the solvents described above.

(b) *To Identify Nitrocellulose Rayon*: If the sample is not cellulose-acetate rayon, treat a few strands with diphenylamine reagent (66 g. of concentrated sulphuric acid, 33 g. of glacial acetic acid, 1 g. of diphenylamine). Nitrocellulose rayon gives a blue color; cuprammonium and viscose rayon do not give a blue color. Nitrocellulose rayon dissolves faster than cuprammonium or viscose rayon.

(c) *To Identify Viscose Rayon*: If the sample is not cellulose-acetate or nitrocellulose rayon, make the following sulphide test:

Place a 5-g. sample of the rayon to be tested in a 250-ml. Erlenmeyer flask together with 100 ml. of water and 3 ml. of concentrated sulphuric acid. Completely cover the mouth of the flask with a piece of lead acetate paper, fastening the paper securely in position and allow to stand at a temperature of 194-203° F. (90-95° C.) for four hours. Viscose rayon stains the lead acetate paper yellowish to brown or possibly black. Cuprammonium rayon does not discolor the paper.

(d) *To Identify Cuprammonium Rayon by Stain Tests*: Four different stain tests are recommended as follows because no one stain test can be relied upon in every case:

Wright Stain Test—Immerse an air-dry sample for a few seconds in a boiling saturated alcoholic solution of Wright stain, rinse thoroughly in cold water. Viscose rayon is stained blue; cuprammonium rayon is stained violet.

Erie Fast Orange—Dye the sample in a 0.2% solution of Erie Fast Orange CG. Viscose rayon is white to weak orange; cuprammonium rayon is dyed deep orange.

Neocarmin W.—Immerse a small sample for three to five minutes in a solution of Neocarmin W. Rinse in running water, pass quickly through water containing a trace of ammonia, rinse well and dry. Viscose rayon is dyed violet; cuprammonium rayon is dyed blue.

Diphenyl Fast Green—Immerse a small sample in a 1% solution of Diphenyl Fast Green B for two minutes at (68° F. 20° C.) Add Glauber's salt. Remove, rinse, and dry. Cuprammonium rayon is dyed green, viscose rayon is undyed.

Cuprammonium rayon cannot be satisfactorily identified by determining residual copper.

If previous tests indicate that the sample is not viscose, acetate or nitrocellulose rayon, it may be presumed that it is cuprammonium rayon but this should be checked by physical and optical methods.

Optical Test—When possible, a microscopic examination of the lateral surface and cross-section of the sample should be made, particularly in the case of cuprammonium and viscose rayon.

(a) *Examination of the Lateral Surface*—Clean the microscope slide by flaming or with solvent, place on this a few filaments from the unknown sample and add a drop of the mounting medium to the filaments on the slide. Place a cover glass over the sample and liquid, pressing them down until the mounting medium wets the whole of the underside of the cover glass. Place the slide on the microscope stage, adjust the light, and focus, using first the 16 mm. and then the 4 mm. objective with the 10X eye piece.

Viscose rayon can be readily distinguished from cuprammonium rayon by the many fine striations parallel with the axis of the filaments. Cuprammonium rayon is unstriated.

(b) *Cross-Sectional Examination* — Prepare a thin cross-section of the sample by twisting several strands together and embedding them in wax, in a cork, or in a Schwarz sectioning plate. Cut a thin section by means of a microtome or a sharp safety razor blade. Mount the sample on a microscope slide and if wax has been used, remove this by dissolving with zylene. Viscose rayon has an irregular serated edge, cuprammonium rayon is almost round and has a serated edge. (Note.—Certain types of high tenacity viscose rayon processed in strong acid baths (Lilienfeld type) appear much more like cuprammonium rayon than regular viscose rayon.)

Japanese Cottons Exports To U. S. Up

Washington. — Hopes that Japan would voluntarily keep her cloth exports to this country down around the average monthly levels of the past six months were dashed when preliminary Department of Commerce figures revealed that during October 2,667,716 yards of Japanese cotton cloth was shipped into the United States.

This figure compares to 2,265,434 square yards imported from Japan in September and 1,896,000 square yards in August. Of the 3,667,716 yard total for October, 3,136,795 square yards was bleached cloth and 530,922 square yards printed cloth. No figures for unbleached cloth were listed for October.

The progressive rate of increase in Japanese cloth imports for August, September and October run counter to recent indications in high official circles to the effect that the Nipponese had entered into a semi-official agreement to keep their cloth exports to this country down to the 2,500,000 yards per month level.

Except for great increases in the last two months of the year, of course, Japanese cloth purchases by this country during 1934 were maintained at low levels, the figures for the first nine months of 1934 being only 3,582,000 square yards imported for consumption.

With respect to the imports for October it will be noted that while figures for print cloths declined somewhat for the month as compared with September, figures for bleached goods almost doubled. Bleached goods imports for October, as noted, totalled 3,136,716 square yards, as compared with 1,718,000 square yards in September. Print cloth imports for October were 530,922 square yards as compared with 547,000 square yards in September.

Open Danville School

Richmond, Va. — Danville's new textile school, made possible by the Riverside and Dan River Cotton Mills, opened Tuesday under the principalship of W. D. Vincent. Its operation at first will be restricted to out-of-school boys between the ages of fifteen and nineteen and those employed who can arrange with their employers to attend the morning school session. Early in the coming year boys who are in high school will be accepted after their working schedules have been co-ordinated.

TEXTILE BULLETIN

Member of
Audit Bureau of Circulations and Associated Business Papers, Inc.
Published Every Thursday By

CLARK PUBLISHING COMPANY

Offices: 118 West Fourth Street, Charlotte, N. C.

DAVID CLARK ..... *Managing Editor*
D. H. HILL, JR. ..... *Associate Editor*
JUNIUS M. SMITH ..... *Business Manager*

SUBSCRIPTION

One year, payable in advance $2.00
Other Countries in Postal Union 4.00
Single Copies ..... .10

Contributions on subjects pertaining to cotton, its manufacture and distribution, are requested. Contributed articles do not necessarily reflect the opinion of the publishers. Items pertaining to new mills, extensions, etc., are solicited.

Demand For Trained Men

DESPITE all of its ups and downs, the textile industry continues to offer unusual opportunities for trained men. In the past several years the mills have shown a tendency to employ more and more technically trained men and an increasing number of them are now filling responsible positions.

We have had renewed evidence of this trend within the past several months. A number of important mill companies have asked us to put them in touch with younger men who can develop the qualities necessary for positions which demand a combination of technical knowledge and executive ability.

A well known spinning mill, which specializes in novelty yarns, including those spun from rayon staple, desired the services of a young man who could be put in charge of its present production and who could assist in the development of a wider range of yarns similar to those it now manufactures.

One of the larger groups of mills in this section recently called upon us for help in engaging a textile graduate, with mill experience, who could take an important position in its card rooms.

Another large chain of mills, within recent weeks, asked our help in securing two young men who are capable of being trained as assistants to the general manager, who has charge of about twelve plants.

A company which operates four mills called us in regard to engaging a superintendent for one of its yarn plants.

It is especially interesting to note that the qualifications of the men desired by these various mills were almost identically the same. They asked first that the men have a textile education and that they have combined this with experience in the mills. They also stressed the fact that the men wanted, besides the above training, must have the energy, initiative and ability to work themselves into positions of trust and responsibility.

In no case was it the intention of these mills to fill top positions with younger men. They were interested in securing the type of men who can gradually move toward the top of their organizations.

Our experience in the instances mentioned above bears out the frequently made statements from heads of the textile schools that the demand for the young men of the proper training and ability is greater than the supply.

It is distinctly encouraging to know that the mills are paying ever increasing attention to technical problems and that the industry, as a whole, offers the younger men now coming on a real opportunity for useful and responsible careers.

Prospects Are Bright

COMING to the last month of the year, there are a number of very encouraging factors in the textile situation. Business in the past two months has shown real improvement. It is true that there is still much complaint about low prices, but they have improved some, with prospects of going higher.

Buyers of cotton goods are showing more confidence in values and the mill men themselves are more confident of a steady market. In the first place, the mills on a very wide range of gray goods are sold up almost entirely for 30 to 60 days, in some cases longer. This means that mills are too well under order to be concerned soon about new business. The outlook for spring replacement business is considered excellent.

It is generally believed in the market that the tendency of customers to resell in advance of the inventory period will be negligible this year and that price pressure will thus be averted. Most goods are in strong hands and with possibility of higher cotton prices early in the year, tendency toward liquidation will be restricted.

These factors are perhaps the most important in the immediate outlook. They are, however, important only as long as production is controlled. At present, while mills are operating on full schedules, stocks have not accumulated, but mills generally have been operating on orders. As long as this control is exercised, we see little likelihood of any market break. If the mills continue to run on a common-sense basis, and

are not lured into heavy overproduction, higher prices should develop in the spring.

Purely internal conditions by which mill operations are affected, appear to be more healthy now than has been the case in a long time. It is also encouraging that unfavorable outside influences, which have in the past two years too frequently upset the market, now appear less likely to be felt.

A great many business authorities are now asserting that we are entering into another period of intense business activity. Some of them frankly expect a boom of major proportions. Whether or not the most optimistic of these prophecies will be realized is more than we can forecast. At any rate, business in practically all lines is showing steady improvement.

With the textile markets on a much more healthy basis, there is no reason why the mills should not come in for their share of the better business that is apparently not far ahead.

Wagner Bill Defense

Cases in which three Southern mills are involved and in which the mills are charged with violation of the collective bargaining provisions of the Wagner Bill, are now up for hearings before representatives of the Labor Board created under the act.

The mills have naturally raised the question of whether the act is constitutional and two of them are contending that their business is intrastate, rather than interstate in character, and therefore not within authority of the Labor Board. Officials in charge of the hearings have declined to consider the constitutionality questions raised by the mills.

Whether or not the Wagner Bill is within constitutional limits is to be settled later. In the meantime, the principal point raised in the complaints covers the setting up of a sole agency through which collective bargaining may be carried on. The United Textile Workers, who brought the complaints, have only one issue at stake—namely, whether or not the U. T. W. can be delegated as the sole bargaining agency.

A rather interesting contention has been raised in this connection. It is simply this: In case the Wagner Board certifies that the U. T. W. is to become the bargaining agency in any mill, the mill does not necessarily have to meet the demands of the union in order to meet the terms of the law. It is brought out in some quarters that if the mill management simply met with the duly certified union committee, then the law has been complied with, whether or not union demands are met.

Pending the time when the Wagner Act will be upheld or scrapped by Supreme Court decision, there does not appear to be anything in the act that could possibly force an employer to accede to union demands.

The No. 1 Reliever

Prof. Rexford Tugwell is regarded in many quarters as the No. 1 Brain Truster in Washington. At any rate, in his position as head of the Rural Resettlement Administration, he seems to be setting up some kind of a record. The latest figures covering the record of his administration show first, that he is employing more than twice as many persons in his administrative work than he is employing in relief work, and second, that the amount he is paying to his staff is about five times greater than the sum paid to relief workers.

Reports from Washington show that Professor Tugwell has hired 12,089 persons to provide jobs for only 5,072 relief workers. The salaries of the administrative staff, spread out in eighteen Washington buildings and the field, total $1,750,000 monthly, as compared to about $300,000 paid the relief workers.

This staff, in addition to having 104 automotive units taken over from other Government agencies, has bought eight passenger cars, all but one of the more expensive type, for use in Washington in addition to four station wagons, twelve trucks and one motorcycle.

Admitting that we have never seen Professor Tugwell in action at first hand, we venture the assertion that he appears to be getting nowhere as fast as his cars, trucks, station wagons and motorcycle can carry him.

She Hadn't Orter

Of cocoanut this is the milk.
The cotton farmer's daughter,
Who rayon wears or filmy silk,
Does what she hadn't orter.

—*Anderson Record.*

In Poker Language

Personally, we think this New Deal is going to wind up with the taxpayers wild.—*Saturday Evening Post.*

Mill News Items

JALONG, N. C.—The Longhurst Mills will be equipped for conditioning cotton by the Borne, Scrymser Company's improved process.

ROCKY MOUNT, N. C.—Rocky Mount Mills have installed new high speed warper and winding equipment, including Cocker warpers and Foster winders.

AUGUSTA, GA.—Sibley Manufacturing Company recently installed one of the latest type Super-Sanforizing machines built by the Textile-Finishing Machinery Company of Providence, R. I.

ROXBORO, N. C.—The Borne, Scrymser Company have accepted orders to exchange picker spraying equipment here for the single unit system.

MARION, N. C.—Officials of the R. I. James & Sons Hosiery Mill here said additional employees will be added to the force and production increased soon because of "a noticeable pick-up in business."

PULASKI, VA.—Mayor E. W. Calfee has announced that a new broad silk mill is to be established on Pierce avenue here by Eastern interests. It is believed operations can be begun by March 1st. The mill will start with sixty employees.

GREENVILLE, TENN.—A new hosiery mill, the name of which has not been disclosed, is planning to locate here if sufficient local co-operation is assured, according to W. G. Caninder, secretary of the Chamber of Commerce. Stock subscriptions are now being solicited by a committee of local business men.

THOMSON, GA.—The Mary Delia Mills, after being closed for four years, have been purchased by local capital and will be operated by Overmeyer & Co., of Jefferson City, N. J., for the manufacture of overalls, work pants and shirts.

Within ten days, machinery will be shipped here and the factory will be operating within two months, employing three hundred operatives, according to the announcement. The company plans to employ 1,000 operatives within one year, with an annual payroll of $200,000.

TARBORO, N. C.—Tentative plans for merging Hart and Fountain Cotton Mills and combining the plants under one roof as a means of reducing operating costs and with the hope of assuring continuous employment of workers were announced here.

The announcement was made by John Youngblood, president of Fountain Mill and vice-president of Hart Mill, who said a joint meeting of directors of both companies will be held here December 3rd to discuss the plan, which has been under consideration for several months.

An agreement by the directors would have to be followed by a meeting of stockholders and their approval given before the merger could be put into effect, Mr. Youngblood stated.

The plans for the consolidation—already worked out in detail but withheld pending final approval by the directors and stockholders—were the result of an investigation by J. E. Sirrine & Co., of Greenville, S. C., engineers.

Mill News Items

KANNAPOLIS, N. C.—Announcement of a building program by the Cannon Mills Company was made by an official of the towel concern, the construction work to include an enlargement of the office in the shipping department and the construction of an additional story at Mill No. 2 here.

The temporary roof of the No. 2 plant is now being torn away to allow the construction of the third floor, which will allow space for storage and the rearrangement of machinery to permit a better balance between units, it was said.

PELL CITY, ALA.—The Pell City department of the Avondale Mills has resumed operations on a full-time basis.

The mills had been operating for the past several months on a 30-hour week basis, working six hours a day, five days a week. The new order places the mills on a 40-hour weekly basis, operating eight hours a day, five days a week.

No change was made in the wage scale, the NRA code minimum and maximum wage scale prevailing.

The Pell City Mill employs approximately 700 operatives.

TAYLORSVILLE, N. C.—F. C. Sherrill, of Cornelius, recently bought the Carolina Spinning Mills. The mill manufactures combed yarn and will be operated by Mr. Sherrill and his son, J. H. Sherrill, who have operated the mill under lease for some time.

The Carolina Spinning Mills consists of 5,500 spindles and is operated by water from a dam, having its own power plant. The mill has been in operation for more than 20 years.

F. C. Sherrill is president of the Gem Yarn Mill of Cornelius, president of the Bank of Cornelius, and is director of the Cornelius Cotton Mill.

KINSTON, N. C.—With 16,000 spindles and employing 450 operatives, Caswell Mills of Kinston, got court order to begin operation and nearly all of these operatives, Judge I. M. Meekins was told, will go off relief and on regular payrolls. Caswell Mills in Kinston have been under the trusteeship of Irving B. Tucker of Whiteville and Broadus M. Griffin of Raleigh. During the hard times operations were suspended. Both of the trustees expressed the belief that the mills can operate now and run on an immediate profit.

It was recalled by Judge Meekins that recently he made an order permitting the Peck Manufacturing Company to proceed in its operations, the management borrowed $5,000 with which to begin and the company has been earning a progt of $3,000 monthly. The judge stated that if it shall appear that the Caswell, which is twice the size of the other manufactory, does not operate at a profit, he can order it closed.

Until the depression broke up markets and wiped out the profits, the Caswell Mills had operated without interruption for many years. All lawyers declared on behalf of the operatives and the company, likewise the trustees, that there is an immediate market for the yarns made by the Caswell Mills and that no hazard is undertaken in reopening the mills. The work begins the first of the week. The Government will not have to put up the money. The local banks have the funds and are anxious to make loans for the beginning of operations, it was said.

Classified Department

WANTED—Two or three good Draper Loom Fixers, twenty-five to thirty years of age; preferably with Jacquard or Dobby experience. Write Box No. 530, Burlington, N. C.

OVERSEER OF WEAVING Department wishes to change position. Eighteen years' experience running silks, rayons and acetate yarns. First-class loom man. Address P. O. Box 512, Greensboro, N. C.

DYER WANTED

Southern mill has opening for competent dyer, experienced in raw stock and package dyeing using direct, napthol and vat colors. State preparatory schooling, experience and where, giving full particulars. State age and if married. AA, care Textile Bulletin.

MURRAY LABORATORY
Chemist and Bacteriologist
Analytical and Consulting.
Sanitary, industrial and boiler water analyses, sizing compounds, oils and general analyses.
17 years experience
21 W. McBee Ave. Greenville, S. C.

G. A. WHITE & CO., Sou. Rep.
International Moistening Co.
Jackson Moistening Co.
Foxboro Humidity Controls
Pumps, Compressor, Used Humidifiers
Box 533 Charlotte, N. C.

BULLETIN WANT ADS
Produce RESULTS At LOW COST
This Size Space $6.00

Need Help?
Find your man through a Bulletin Want Ad
This Size Space $3.00 per insertion

Expect 400 Chemists

Chattanooga, Tenn. — Four hundred of the nation's leading textile chemists are expected to assemble here December 6th and 7th for the annual meeting of the American Association of Textile Chemists and Colorists.

Harold Schroeder, of the Dixie Mercerizing Company, is chairman of the South-Central Section of the national body, which is host to the meeting. W. J. Kelly, Jr., of the Burkhart-Schier Company, is general chairman of the committee on arrangements and publicity.

"Political discussions will not form any part of the official program," Mr. Schroeder declared. "The chemists are coming to Chattanooga," he said, "to hear technical papers on subjects in which they are interested."

The convention will open Friday night, December 6th, with a buffet supper. Three technical papers, two of which are concerned with scientific optical apparatus used by textile chemists, and the third with dyestuffs, will be read. The papers will be followed by entertainment and a dance.

Saturday morning and afternoon will be taken up with the reading of papers, the usual reports and the election of officers. A highlight of the meeting will be a banquet Saturday night. Speaking will be limited and a "brilliant" display of dresses of rayon, silk and cotton will be exhibited in a style show. In connection with the meeting, leading textile manufacturers of Chattanooga and vicinity, co-operating with local stores, have arranged for a display of their products in show windows.

November Rayon Shipments High

Shipments of rayon yarn were somewhat in excess of 20 million pounds during November, is the concensus of preliminary estimates by trade observers of the month's showing.

With yarn going out at this rate, rayon yarn companies report that the total stocks of yarn were in excess of the month's production. The rate of shipment of the viscose process branch of the industry was said to be somewhat better than the acetate.

Of the branches of the consuming trade that showed the best relative volume, weaving stands first. In this field some producers believe that the production of fabrics for the underwear trade showed the best gains. Distribution to the hosiery trade is unsensational while an unsatisfactory situation is reported in circular knit rayon fabric branch. Selling practices rather than lack of demand by underwear cutters is characterized as being the main reason for the unhappy status of that branch of the trade.

Early productions are that the rayon industry probably will end the year with the stock situation at practically as low a point as at the end of 1934, which level is considered to be entirely satisfactory.

Some producers predict that it may be necessary to have larger stocks of yarn next year due to the greater number of descriptions of yarn in active demand.

World's U. S. Cotton Stocks Show Drop

The total stock of American cotton in all hands in the world, including the unpicked portion of the crop, was approximately 16,981,000 bales at the end of October, compared with 17,295,000 on the same day last year, according to the New York Cotton Exchange Service. In the last five years the average end of October stock has been 20,071,000 bales, and thus the current stock is 3,090,000 bales below the fiveyear average.

The total stock in the United States at the end of October, according to the Exchange Service, was 15,193,000 bales, compared with 14,546,000 on the same date last year, thus showing an increase of 647,000. The stock abroad, however was only 1,788,000 bales, compared with 2,749,000 last year, showing a decrease of 961,000.

Continuous Cupra Process Patent Given To Bemberg

An American patent for the continuous treatment of cuprammonium yarn after spinning has been granted to American Bemberg Corporation in U. S. Patent No. 2,020,057 awarded to August Hartman, Walter Hoefinghoff, and Karl Meyer-Gaus, of Germany, who are the assignors to Bemberg. The application for the patent was made in this country on January 24, 1934, and in Germany on January 31, 1933.

The patent literature tells of how, "In a device for use in the wet treatment of formed filaments, in combination, a hollow cylindrical roller over which the filaments are passed in a helical path, said roller mounted on a substantially vertical axis, means for applying different treatment liquids simultaneously at spaced points to said filaments while on said roller, and means operative with said roller for keeping the different treating liquids substantially separated."

A continuous treatment of cuprammonium rayon is at present employed by New Process Rayon, Inc., operating on the Furness patents.

Index To Advertisers

Where a — appears opposite a name it indicates that the advertisement does not appear in this issue.

Beattie Backs Lamport Export Plan

Greenville, S. C.—Endorsement of the Lamport export plan was given by S. M. Beattie, president of the South Carolina Cotton Manufacturers' Association.

Discussing the plan as advanced by S. C. Lamport, which he heard outlined at Spartanburg, Mr. Beattie said: "That sounds fine; it would certainly help if the Government through an allocation of 15 million dollars to the textile industry, could sell cotton to the mills at 7 cents.

Mr. Beattie said the Lamport plan, if put into effect, would immediately lead to an increase of 25,000, possibly more, in the number of employees in cotton mills of the nation.

Mr. Lamport ,who spent two nights and one day in Greenville, left for Washington and New York.

Cotton Goods Markets

New York.—There was a moderate amount of business in the cotton goods markets last week in spite of the holiday. Prices continued very firm. The end of the month showed that business done in November was very substantial and that the mills should reach the end of the year in a very strong position. The price gain in November was not sufficient to offer good profits to the mills, especially in view of the higher ground reached by cotton. It is expected here that December business will be better than is usually the case during the month.

Print cloths were generally unchanged last week. Sales were moderately large. Most sellers were quoting higher prices for delivery past the first of the year. There was a very good demand for carded broadcloths and prices were very strong. A number of important mills cannot offer additional deliveries before February and as a whole, this group is very well sold ahead. Business in sheetings was very good and orders for future delivery were large. It is becoming increasingly difficult to place orders for early delivery.

The call for fancy goods continued, despite the fact that converters already are heavily committed. Finished goods sales were reported moving in good amounts. Advances in gray prices in some lines have been paid, although converters are concerned over the possibility that further advances might carry the goods out of the retail ranges into which they have been fited for the season.

The market for fine goods in standard constructions has shown considerable improvement in the past ten days. Sales of combed goods in the gray have increased and prices have improved. Stocks are small.

Rayon cloth sales were slightly improved, and the market appeared to be somewhat more stable than in previous weeks. It was no longer possible to shade asking prices on several cloths, although few definite advances have been made. The discouraging part of the situation was that buyers said they could not pay higher than current prices without sacrificing volume, while mills said they could not make goods at current prices.

Print cloths, 27-in., 64x60s	5
Print cloths, 28-in., 64x60s	5⅛
Gray goods, 38½-in., 64x60s	6¼
Gray goods, 39-in., 80x80s	8⅝
Gray goods, 39-in., 68x72s	7½
Brown sheetinfs, 3-yard	9¼
Brown sheetings, standard	9¾
Tickings, 8-ounce	19
Denims	15
Brown sheetings, 4-yard, 56x60s	7¾
Dress ginghams	17¼
Staple ginghams	10

Cotton Yarn Markets

Philadelphia, Pa.—The yarn market was generally quiet, due to the holiday and sales last week were not as large as they have been for the past several weeks. Yarn consumers are showing more resistance to higher prices and many of them are placing orders only as they receive new business in their own lines. On the other hand, some users of knitting yarns continued to contract for yarns to be delivered after the turn of the year. Prices were generally unchanged and were firm during the week.

Buying of cotton yarns for nearby use continues on fair scale and the urgency with which such yarns are demanded indicates that some buyers missed their market last month. Speculative buying seems to be out of the picture and it is generally agreed that the great improvement seen in the market, both as to volume and price, are based upon actual needs. Sales and prices quite obviously are to be better than usual during these closing weeks of the year. There are no stocks of yarn accumulating. In carded yarns shipments exceed production and this is very generally true of combed yarns, especially singles.

The sales yarn market received new impetus from Government purchases of socks and underwear for the Civilian Conservation Corps, the local depot awarding contracts for 300,000 undershirts made from 24s combed and for 500,000 pairs of cotton socks made from the same count of the hosiery was trying to buy 24s at 37c but spinners quote dhim 40c, one stating it would go down to 39c on a Government order but did not get the business.

Repeatedly buyers find spinners not interested in taking any orders for January forward yarn deliveries. They are motivated in refusals by concluding that cotton will be higher and yarn prices improved. What is happening in these places is that there is enough sales backlog to remain open on a part of production for whatever eventualities may occur.

The bullish tendency in the sales yarn market continues in force. Suppliers of carded and combed yarns are able to maintain their prices with little difficulty. Meanwhile, the bulk of the yarns being delivered are being taken in by customers at prices well below present replacement values.

Southern Single Skeins	
8s	28 --
10s	28 --
12s	28½ --
14s	29 --
20s	31 --
26s	32½ -33½
30s	35 --
36s	39 --
40s	41 --
Southern Single Warps	
10s	28 --
12s	28½ --
14s	29 --
16s	30 --
20s	31 --
26s	32½ -33½
30s	35 --
40s	41 --
Southern Two-Ply Chain Warps	
8s	28 --
10s	28½ --
12s	29 --
16s	30½ --
20s	31½ -32
24s	32½ -33½
26s	33½ -34½
30s	30 -36½
36s	40 --
40s	42 --
Southern Two-Ply Skeins	
8s	28 --
10s	28½ --
12s	29 --
14s	29½ --
16s	30 -30½
20s	31½ --
24s	32½ -33½
26s	33½ -34½
30s	36 -36½
40s	42 --
40s ex.	43 --
50s	48 --
Duck Yarns, 3, 4 and 5-Ply	
8s	28 --
10s	28½ --
12s	29 --
16s	30 --
20s	31½ --
Carpet Yarns	
Tinged carpets, 8s, 3 and 4-ply	24½ -25½
Colored strips, 8s, 3 and 4-ply	26 --
White carpets, 8s, 3 and 4-ply	28 --
Part Waste Insulating Yarns	
8s, 1-ply	24 --
8s, 2, 3 and 4-ply	25 --
10s, 2, 3 and 4-ply	27 --
12s, 2-ply	27½ -28
16s, 2-ply	29 -29½
20s, 2-ply	30½ -31
30s, 2-ply	35½ --
Southern Frame Cones	
8s	27 --
10s	28 --
12s	28½ --
14s	29 --
16s	29½ --
18s	30 --
20s	30½ --
22s	31½ --
24s	32½ --
26s	33½ --
28s	34½ --
30s	35 -35½
40s	41 --

Visiting The Mills

By Mrs. Ethel Thomas Dabbs (Aunt Becky)

SARGENT, GA.

ARNALL MILLS HAS A FINE COMMUNITY.

Next time a "traveling man" tells me that President A. W. Arnall is "hailed boiled," I'm going to dispute it. He was the soul of courtesy to me, and I had a lovely visit to Arnall Mills.

Met the secretary, E. H. Peniston, but don't think I met Vice-President and Treasurer F. M. Arnall.

My good friend, R. T. Smith, is superintendent and another good friend, W. T. Hunt, who grew up in LaGrange, is overseer carding and was my first subscriber. R. J. Horton, section man, A. J. Scott, card grinder, Jim Proctor, section man on pickers, are other progressives in the card room.

O. E. Hamer, another LaGrange and Hogansville man, is overseer spinning, and Henry Grizzard, second hand; W. L. Caston, a brother to the superintendent at Arnco, is the live wire overseer of weaving; W. C. Howell, second hand in finishing; Gene Newman, second hand in napping; E. E. Collins, head packer; L. N. Peyton, overseer weaving, second shift.

Robert E. Lee, second hand in weaving on first shift, had already mailed his renewal subscription to headquarters, so afraid he would miss a copy.

A FINE SUNDAY SCHOOL

There is always a fine community and good people, where superintendent and overseers worship with the people on Sunday as faithfully as they work with them through the week; and here is where religious work is considered first importance by every overseer and the superintendent.

The present superintendent's father, J. A. Smith, deceased, served here 57 years, 38 of which was in the office of superintendent. At his death, he left $2,500 to build Sunday school rooms to the community church, and these rooms were built and dedicated the past September.

W. L. Caston, overseer of weaving, teaches the Bible Class, which numbered ten last July, and now has an enrollment of over a hundred, with an average attendance of 80 or 85, which speaks well for both teacher and Bible students.

Blankets and more blankets—23,000 pairs per week, if I make no mistake—are made here. They are of various style and weight, but all pretty and durable. Superintendent Smith and Mr. Caston, overseer of weaving, presented me a lovely pair which I prize highly—and especially in such weather as we've had the past few days.

NEWNAN, GA.

ARNCO MILL, T. A. CASTON, SUPT., AN IDEALLY ARRANGED PLANT.

Arnco is on Route 5, a short drive from Newnan, and is perhaps the only mill with such perfect arrangements. It is one story, the cotton starts in at one end, goes through with no lost motion or unnecessary work, is finished up and packed ready to ship at the other end of the mill. In all my travels, I've never seen another mill arranged so perfectly.

Superintendent T. A. Caston, formerly of Draper, N. C., was on the spot to see to the finishing of the mill and the placing of the machinery, and the result proves his clear-sightedness and executive ability. The mill has been running a number of years, producing blankets of superior quality and style. Mr. Caston has an able assistant in J. B. Schilling, a very pleasant young gentleman.

Overseers are J. S. Eanes, carder; Richardson Orr, spinner; H. J. Hensley, weaver, with W. J. Eanes, second hand.

CLIFFSIDE, N. C.

CLIFFSIDE MILLS LOCATED IN SCENIC SURROUNDINGS THAT IN SUMMER ARE BEAUTIFUL BEYOND DESCRIPTION.

In rose time, Cliffside in indescribably lovely, with Dorothy Perkins and Crimson Rambler roses covering every unsightly red bank, and spreading a mantle of pink and crimson over all. The river and tall hills, curved highways like silver ribbons winding about, altogether make an entrancing picture.

Then, too, the mill is nice and clean, furnishing work and good wages to people who appreciate such opportunities in these days of uncertainty. The village homes are neat and attractive; churches and schools all one could wish, and there are all the conveniences and attractions needed in a modern town.

The mill president, Chas. H. Haynes (and his father before him), the general manager and secretary, M. Hen-

drick, and the treasurer, Geo. C. Shuford, are well known for their fair and square dealing and are highly respected by all who know them.

Superintendent E. C. Combs, a thoroughbred gentleman, kind, courteous and obliging, has won the confidence of the operatives and deserves their hearty co-operation.

The writer appreciates the lovely bath ensemble presented by Mr. Combs as a Christmas present. There is nothing more appropriate for presents than these pretty products, so attractively wrapped in cellophane, and nothing that a woman will prize more highly. Thank you, Mr. Combs.

Overseers are J. D. Brown, carder; J. P. Hill, spinner; A. T. Roberson, warp preparation; D. S. B. Bridges, weaver; James Tinkler, dyer and bleacher; John Talbert, designer, and J. M. Goode, master mechanic.

Other good friends and regular readers of The Textile Bulletin are G. C. Compton, C. S. Greene, C. A. Hamrick and J. A. Rhymer.

Was sorry to learn of the passing of Mr. S. L. Thompson, overseer the cloth room, whose smiling face always welcomed me on former visits. He was a good man and will not soon be forgotten by his many friends.

GREENVILLE, S. C.

American Spinning Co.

Spent the night with my good friends, Superintendent and Mrs. W. J. Still. Thought I'd get a big list of subscribers, but that busy son of mine had beat me to it by a few days.

This is a lovely place to visit and the overseers are friendly and high type. Work running good and everybody seemed happy.

Geo. M. Bayne is overseer carding; W. T. Morton, overseer spinning; W. A. McNease, overseer weaving; R. D. Dillard, overseer cloth room; M. C. Kirkpatrick, master mechanic, and G. C. Batson, outside man.

CLINTON, S. C.

Clinton Cotton Mills

This mill runs two 40-hour shifts, has a fine and loyal group of employees, and all pull together for mutual good. These people know that capital must get a reasonable return on investments or close down, and they all prefer work to charity—hence, they are interested in doing their part to keep the wheels of industry turning.

One of the most amazingly clean power plants to be found is at this mill. It not only furnishes power and lights for Clinton and Lydia Mills, but also lights for the city. There's a big "silo" for coal, from which it automatically feeds into a pulverizing machine and is from there blown into the furnaces. The floor of the power plant is gray—paint or enamel over cement—and is smooth and shiny like ice. Not even a bit of dust anywhere.

The entire mill is delightfully clean and work runs good. Overseers are friendly and courteous, and the writer truly enjoyed visiting this plant.

E. A. Hill is superintendent and "a jolly good fellow;" John Weir, carder; M. Sanders, spinner; A. H. Hughes, weaver, and J. M. Anderson and J. D. Ward, second hands; S. B. Snellgrove, cloth room; J. J. West, master mechanic. Superintendent Hill and these overseers have charge of Lydia Mill also. Claude R. Trammell, paymaster.

RANLO, N. C.

Rex Spinning Company, superintended by W. N. Williams, is one of the perfectly clean mills we have found. Not a bobbin nor a bit of waste to be found on the floor anywhere. Work runs so good that operatives actually get to use the seats provided for them, and are not afraid that things will get in a mess unless watched every minute.

Mr. Williams has every reason to be proud of Rex, and the splendid co-operation given him by all employed here. The beautiful order prevailing is not the work of one or a few, but is the result of team work by all, says Mr, Williams.

The writer had the pleasure of meeting the secretary and treasurer, Mr. C. A. Rudisill, of Cherryville, where he has two other mills, and one also at Lincolnton, and at Salisbury. (There may be others.)

Mr. Williams, superintendent at Rex, is also superintendent of the mill at Lincolnton, Rudisill Spinning Mill, and of Cartex Mill, in Salisbury, which shows that his ability is recognized and appreciated.

Overseers at Rex are splendid gentlemen, deeply interested in their work and in keeping up with textile progress in general. G. R. Russell is overseer carding, assisted on first shift by A. F. Goodman and on second shift by T. L. Kay.

A. L. Ledbetter, overseer spinning, was out sick, but not seriously, we are glad to state. F. J. Smith on first shift and G. W. Smith on second shift are his second hands. David Day, master mechanic.

GASTONIA, N. C.

Myrtle Mill Folks Practice Their Religion in Everyday Life

The writer has heard people remark that "it's strange how Myrtle can always run, even when others on the same kind of work have to close down or curtail drastically."

After probing into the "why and wherefore" of the situation around Myrtle, it is easy to understand why God smiles on this place and protects it from hard winds of adversity. There is no mystery about it. It is the fulfillment of promise to those who take God at His word, and make Him a partner in all transactions of everyday life and business.

Superintendent D. A. Whitener is a consecrated Christian and an active leader in the community church and Sunday school. So are his overseers. A large majority

(Continued on Page 26)

Southern Sources of Supply

For Equipment, Parts, Material, Service

Following are the addresses of Southern plants, warehouses, offices, and representatives of manufacturers of textile equipment and supplies who advertise regularly in TEXTILE BULLETIN. We realize that operating executives are frequently in urgent need of information service, equipment, parts and materials, and believe this guide will prove of real value to our subscribers.

ABBOTT MACHINE CO., Wilton, N. H. Sou. Agt., L. S. Ligon, Greenville, S. C.

AKRON BELTING CO., Akron, O. Sou. Branches, 209 Johnston Bldg., Charlotte, N. C.; 905 Woodside Bldg., Greenville, S. C.; 20 Adams Ave., Memphis, Tenn.

ALLIS-CHALMERS MFG. CO., Milwaukee, Wis. Sou. Sales Offices: Atlanta, Ga., Healey Bldg., Berrien Moore, Mgr.; Baltimore, Md., Lexington Bldg., A. T. Jacobson, Mgr.; Birmingham, Ala., Webb Crawford Bldg., John J. Greagan, Mgr.; Charlotte, N. C., Johnston Bldg., William Parker, Mgr.; Chattanooga, Tenn., Tennessee Electric Power Bldg., D. S. Kerr, Mgr.; Cincinnati, O., First National Bank Bldg., W. G. May, Mgr.; Dallas, Tex., Santa Fe Bldg., E. W. Burbank, Mgr.; Houston, Tex., Shell Bldg., K. P. Ribble, Mgr.; New Orleans, La., Canal Bank Bldg., F. W. Stevens, Mgr.; Richmond, Va., Electric Bldg., C. L. Crosby, Mgr.; St. Louis, Mo., Railway Exchange Bldg., C. L. Orth, Mgr.; San Antonio, Tex., Frost National Bank Bldg., Earl R. Hury, Mgr.; Tampa, Fla., 415 Hampton St., H. C. Flanagan, Mgr.; Tulsa, Okla., 18 North Guthrie St., D. M. McCargar, Mgr.; Washington, D. C., Southern Bldg., H. C. Hood, Mgr.

AMERICAN CYANAMID & CHEMICAL CORP., 30 Rockefeller Plaza, New York City. Sou. Office and Warehouse, 301 E. 7th St., Charlotte, N. C., Paul Haddock, Sou. Mgr.

AMERICAN ENKA CORP., 271 Church St., New York City. Sou. Rep., R. J. Mebane, Asheville, N. C.

AMERICAN MOISTENING CO., Providence, R. I. Southern plant, Charlotte, N. C.

ARNOLD, HOFFMAN & CO., Inc., Providence, R. I. Frank W. Johnson, Sou. Mgr., Box 1268, Charlotte, N. C. Sou. Reps., Robert E. Buck, Box 904, Greenville, S. C.; Harold T. Buck, 1615 12th St., Columbus, Ga.; W. Chester Cobb, Hotel Russell Erskine, Huntsville, Ala.

ASHWORTH BROS., Inc., Charlotte, N. C. Sou. Offices, 44-A Norwood Place, Greenville, S. C.; 215 Central Ave., S.W., Atlanta, Ga.; Texas Rep., Textile Supply Co., Dallas, Tex.

ATLANTA HARNESS & REED MFG. CO., Atlanta, Ga., A. P. Robert and G. P. Carmichael, Atlanta Office. Sou. Reps., Ala. and Ga., Barney R. Cole, Atlanta Office; Carolinas and Va., W. T. Smith, P. O. Box 849, Greenville, S. C.

BANCROFT BELTING CO., 145 High St., Boston, Mass. Sou. Agent, Ernest F. Culbreath, Ninety-Six, S. C.

BARBER-COLMAN CO., Rockford, Ill. Sou. Office, 31 W. McBee Ave., Greenville, S. C., J. H. Spencer, Mgr.

BORNE, SCRYMSER CO., 17 Battery Place, New York City. Sou. Mgr., H. L. Siever, P. O. Box 1169, Charlotte, N. C. Sales Reps., W. B. Uhler, 608 Palmetto St., Spartanburg, S. C.; R. C. Young, Jefferson Apts., Charlotte, N. C.; John Ferguson, 303 Hill St., LaGrange, Ga.

BROWN CO., DAVID, Lawrence, Mass. Sou. Reps., Ralph Gossett, Woodside Bldg., Greenville, S. C.; William J. Moore, Woodside Bldg., Greenville, S. C.; Belton C. Plowden, Griffin, Ga.; Gastonia Mill Supply Co., Gastonia, N. C.; Russell A. Singleton, Dallas, Tex.; S. Frank Jones, 209 Johnston Bldg., Charlotte, N. C.; J. Richard Plowden, 421 10th Ave., West, Birmingham, Ala.

BROWN & CO., D. P., Philadelphia, Pa. Sou. Rep., N. W. Pyle, Box 834, Charlotte, N. C.

BUTTERWORTH & SONS CO., H. W., Philadelphia, Pa. Sou. Office, Johnston Bldg., Charlotte, N. C., J. Hill Zahn, Mgr.

CAMPBELL & CO., JOHN, 76 Hudson St., New York City. Sou. Reps., M. L. Kirby, P. O. Box 432, West Point, Ga.; Mike A. Stough, P. O. Box 701, Charlotte, N. C.; A. Max Browning, Hillsboro, N. C.

CAROLINA REFRACTORIES CO., Hartsville, S. C.

CHARLOTTE CHEMICAL LABORATORIES, Inc., Charlotte, N. C.

CHARLOTTE LEATHER BELTING CO., Charlotte, N. C.

CHICAGO MILL & LUMBER CO., 614 Johnston Bldg., Charlotte, N. C. Sales Staff, E. J. Mueller, C. P. Semmlow. Executive Offices, 111 W. Washington St., Chicago, Ill.

CIBA CO., Inc., Greenwich and Morton Sts., New York City. Sou. Offices, 519 E. Washington St., Greensboro, N. C.; Greenville, S. C.

CLINTON CO., Clinton, Iowa. Sou. Offices, Clinton Sales Co., Greenville, S. C., Byrd Miller, Sou. Rep.; Atlanta Office, 223 Spring St., S.W., Box 466, Luther Knowles, Jr., Sou. Rep.; Charlotte, N. C. Stocks carried at convenient points.

COMMERCIAL CREDIT CO., Baltimore, Md. Sou. Rep., C. R. Taylor, 1414 Johnston Bldg., Charlotte, N. C.

COMMERCIAL FACTORS CORP., 2 Park Ave., New York City. Sou. Rep., T. Holt Haywood, Reynolds Bldg., Winston-Salem, N. C.

CORN PRODUCTS REFINING CO., 17 Battery Place, New York City. Corn Products Sales Co., Greenville, S. C., John R. White, Mgr.; Corn Products Sales Co., Montgomery Bldg., Spartanburg, S. C., J. Canty Alexander, Asst. Sou. Mgr.; Corn Products Sales Co. (Mill and Paper Starch Div.), Hurt Bldg., Atlanta, Ga., C. G. Stover, Mgr.; Corn Products Sales Co., 824-26 N. C. Bank Bldg., Greensboro, N. C., W. R. Joyner, Mgr.; Corn Products Sales Co., Comer Bldg., Birmingham, Ala., L. H. Kelley, Mgr. Stocks carried at convenient points.

CROMPTON & KNOWLES LOOM WORKS, Worcester, Mass. Sou. Plant, Charlotte, N. C.

DARY RING TRAVELER CO., Taunton, Mass. Sou. Rep., John E. Humphries, P. O. Box 843, Greenville, S. C.; Chas. L. Ashley, P. O. Box 720, Atlanta, Ga.

DILLARD PAPER CO., Greensboro, N. C., Greenville, S. C. Sou. Reps., E. B. Spencer, Box 681, Charlotte, N. C.; Jess Caldwell, East Radford, Va.

DAUGHTRY SHEET METAL CO., Charlotte, N. C.

DRAPER CORPORATION, Hopedale, Mass. Sou. Rep., E. N. Darrin, Vice-Pres.; Sou. Offices and Warehouses, 242 Forsyth St., S.W., Atlanta, Ga., W. M. Mitchell, Spartanburg, S. C., Clare H. Draper, Jr.

DUNKEL CO., PAUL A., 82 Wall St., New York City.

DU PONT DE NEMOURS & CO., Inc., E. I., Dyestuffs Div., Wilmington, Del. John L. Dabbs, Mgr.; D. C. Newman, Asst. Mgr.; E. P. Davidson, Asst. Mgr.—Technical. Sou. Warehouses, 302 W. First St., Charlotte, N. C. Reps., L. E. Green, H. B. Constable, W. R. Ivey, Charlotte Office; J. D. Sandridge, W. M. Hunt, 1031 Jefferson Standard Bldg., Greensboro, N. C.; B. R. Dabbs, John L. Dabbs, Jr., 715 Providence Bldg., Chattanooga, Tenn.; R. D. Sloan, Amanda Apt., Greenville, S. C.; J. M. Howard, 135 S. Spring St., Concord, N. C.; W. F. Crayton, Dimon Court Apt., Columbus, Ga.; J. A. Franklin, Augusta, Ga.; Tom Taylor, Newnan, Ga.

DU PONT DE NEMOURS & CO., Inc., E. I., The R. & H. Chemicals Dept., Wilmington, Del. R. M. Levy, Dist. Sales Mgr., 302 W. First St., Charlotte, N. C.

EATON, PAUL B., 213 Johnston Bldg., Charlotte, N. C.

ECLIPSE TEXTILE DEVICES CO., Elmira, N. Y. Sou. Rep., John D. Lutes, P. O. Box 1551, Charlotte, N. C.

EMMONS LOOM HARNESS CO., Lawrence, Mass. Sou. Rep., George F. Bahan, P. O. Box 581, Charlotte, N. C.

ENGINEERING SALES CO., 601 Builders' Bldg., Charlotte, N. C.

GENERAL DYESTUFF CORP., 230 Fifth Ave., New York City. Sou. Office and Warehouse, 1101 S Blvd., Charlotte, N. C., B. A. Stigen, Mgr.

GENERAL ELECTRIC CO., Schenectady, N. Y. Sou. Sales Offices and Warehouses, Atlanta, Ga. E. H. Ginn, Dist. Mgr.; Charleston, W. Va., W. L. Alston, Mgr.; Charlotte, N. C., E. P. Coles, Mgr.; Dallas, Tex., L. T. Blaisdell, Dist. Mgr.; Houston, Tex., E. M. Wise, W. O'Hara, Mgrs.; Oklahoma City, Okla., F. D. Hathway, B. F. Dunlap, Mgrs. Sou. Sales Offices, Birmingham, Ala., R. T. Brooke, Mgr.; Chattanooga, Tenn., W. O. McKinney, Mgr.; Ft. Worth, Tex., A. H. Keen, Mgr.; Knoxville, Tenn., A. B. Cox, Mgr.; Louisville, Ky., E. B. Myrick, Mgr.; Memphis, Tenn., G. O. McFarlane, Mgr.; Nashville, Tenn., J. H. Barksdale, Mgr.; New Orleans, La., B. Willard, Mgr.; Richmond, Va., J. W. Hicklin, Mgr.; San Antonio, Tex., I. A. Uhr, Mgr.; Sou. Service Shops, Atlanta, Ga.; W. J. Selbert, Mgr.; Dallas, Tex., W. F. Kaston, Mgr.; Houston, Tex., F. C. Bunker, Mgr.

GENERAL ELECTRIC VAPOR LAMP CO., Hoboken, N. J. Sou. Reps., Frank E. Keener and Earle Mauldin, 187 Spring St., N.W., Atlanta, Ga.; C. N. Knapp, Commercial Bank Bldg., Charlotte, N. C.

GOODRICH CO., B. F., 4th and Brevard Sts., Charlotte, N. C. Atlanta Dist. Office, 376 Nelson St., S.W., Atlanta, Ga.

GOODYEAR TIRE & RUBBER CO., Inc., The, Akron, O. Sou. Reps., W. C. Killick, 205-207 E. 7th St., Charlotte, N. C.; P. B. Eckels, 141 N. Myrtle Ave., Jacksonville, Fla.; Boyd Arthur, 713-715 Linden Ave., Memphis, Tenn.; T. F. Stringer, 500-6 N. Carrollton Ave., New Orleans, La.; E. M. Champion, 709-11 Spring St., Shreveport, La.; Paul Stevens, 1609-11 First Ave., N. Birmingham, Ala.; B. S. Parker, Jr., Cor. W. Jackson and Oak Sts., Knoxville, Tenn.; E. W. Sanders, 209 E. Broadway, Louisville, Ky.; H. R. Zierach, 1225-31 W. Broad St., Richmond, Va.; J. C. Pye, 191-199 Marietta St., Atlanta, Ga.

GRASSELLI CHEMICAL CO., Cleveland, O. Sou. Office and Warehouse, 302 W. First St., Charlotte, N. C.

GRATON & KNIGHT CO., Worcester, Mass. Sales Reps., R. W. Davis, Graton & Knight Co., 313 Vine St., Philadelphia, Pa.; D. A. Ahlstrand, 1271 N. Morningside Drive, Atlanta, Ga.; D. P. Gordon, Graton & Knight Co., 115 S. 11th St., St. Louis, Mo.; O. D. Landis, 1709 Springdale Ave., Charlotte, N. C.; Roger W. Allen, 2078 Hallwood Drive, Memphis, Tenn.; H. L. Cook, Graton & Knight Co., 2615 Commerce St., Dallas, Tex. Jobbers: Alabama Machinery & Supply Co., Montgomery, Ala.; McGowin-Lyons Hdwe. & Supply Co., Mobile, Ala.; C. C. Anderson, 301 Woodside Bldg. Annex, Greenville, S. C.; Cameron & Barkley Co., Charleston, S. C.; Cameron & Barkley Co., Jacksonville, Fla.; Cameron & Barkley Co., Miami, Fla.; Cameron & Barkley Co., Tampa, Fla.; Smith-Courtney Co., Richmond, Va.; Taylor-Parker, Inc., Norfolk, Va.; Battery Machinery Co., Rome, Ga.; Columbus Iron Works, Columbus, Ga.; Fulton Supply Co., Atlanta, Ga.; Dallas Belting Co., Dallas, Tex.; Textile Supply Co., Dallas, Tex.; Textile Mill Supply Co., Charlotte, N. C.; Keith-Simmons Co., Nashville, Tenn.; Lewis Supply Co., Memphis, Tenn.; Lewis Supply Co., Helena, Ark.; Southern Supply Co., Jackson, Tenn.; E. D. Morton & Co., Louisville, Ky.; Standard Supply & Hdwe. Co., New Orleans, La.

GREENVILLE BELTING CO., Greenville, S. C.

HART PRODUCTS CORP., 1440 Broadway, New York City. Sou. Reps., Samuel Lehrer, Box 234, Spartanburg, S. C.; Talley W. Piper, P. O. Box 534, Fairfax, Ala.; L. R. Unruh, P. O. Box 1602, Charlotte, N. C.

H & B AMERICAN MACHINE CO., Pawtucket, R. I. Sou. Offices, 815 The Citizens and Southern National Bank Bldg., Atlanta, Ga., J. C. Martin, Agt.; Johnston Bldg., Charlotte, N. C.; J. W. Rimmer, Mgr.; Fritz Zweifel, Fred Dickinson, Jim Miller, sales and service representatives.

HERCULES POWDER CO., Wilmington, Del. Sou. Reps., Chas. H. Stone, Charlotte, N. C.

HERMAS MACHINE CO., Hawthorne, N. J. Sou. Rep., Carolina Specialty Co., P. O. Box 520, Charlotte, N. C.

HOUGHTON & CO., E. F., 240 W. Somerset St., Philadelphia, Pa. Sou. Sales Mgr., W. H. Brinkley, 1410 First National Bank Bldg., Charlotte, N. C. Sou. Reps., Walter Andrews, 1306 Court Square Bldg., Baltimore, Md.; C. L. Elgert, 1306 Court Square Bldg., Baltimore, Md.; C. B. Kinney, 1410 First National Bank Bldg., Charlotte, N. C.; D. O. Wylie, 1410 First National Bank Bldg., Charlotte, N. C.; J. J. Reilly, 2855 Peachtree, Apt. No. 45, Atlanta, Ga.; James A. Brittain, 1526 Sutherland Place, Homewood, Birmingham, Ala.; J. W. Byrnes, 333 St. Charles St., New Orleans, La.; B. E. Dodd, 333 St. Charles St., New Orleans, La.

HOUGHTON WOOL CO., 253 Summer St., Boston, Mass. Sou. Rep., Jas. E. Taylor, P. O. Box 504, Charlotte, N. C.

HOWARD BROS. MFG. CO., Worcester, Mass. Sou. Office and Plant, 244 Forsyth St., S.W., Atlanta, Ga., Guy L. Melchor, Mgr. Sou. Rep., Guy L. Melchor, Jr., Atlanta Office; S.W. Rep., Russell A. Singleton, Mail Route 5, Dallas, Tex.

INDUSTRIAL RAYON CORP., Cleveland, O. Sou. Reps., J. H. Mason, P. O. Box 897, Greensboro, N. C.; Bruce Griffin, 1128 Elizabeth Ave., Charlotte, N. C.; W. L. Jackson, 920 Provident Bldg., Chattanooga, Tenn.

JACKSON LUMBER CO., Lockhart, Ala.

JACOBS MFG. CO., E. H., Danielson, Conn. Sou. Rep., W. Irving Bullard, Pres., Charlotte, N. C. Mgr. Sou. Service Dept., S. B. Henderson, Greer, S. C.; Sou. Distributors, Odell Mill Supply Co., Greensboro, N. C.; Textile Mill Supply Co., and Charlotte Supply Co., Charlotte, N. C.; Gastonia Mill Supply Co., Gastonia, N. C.; Shelby Supply Co., Shelby, N. C.; Sullivan Hdw. Co., Anderson, S. C.; Montgomery & Crawford, Spartanburg, S. C.; Industrial Supply Co., Clinton, S. C.; Carolina Supply Co., Greenville, S. C.; Fulton Supply Co., Atlanta, Ga.; Southern Belting Co., Atlanta, Ga.; Greenville Textile Mill Supply Co., Greenville, S. C., and Atlanta, Ga.; Young & Vann Supply Co., Birmingham, Ala.; Waters-Garland Co., Louisville, Ky.

JOHNSON, CHAS. B., Paterson, N. J. Sou. Rep., Carolina Specialty Co., Charlotte, N. C.

KEEVER STARCH CO., Columbus, O. Sou. Office, 1200 Woodside Bldg., Greenville, S. C.; Daniel H. Wallace, Sou. Agt. Sou. Warehouses, Greenville, S. C., Charlotte, N. C., Burlington, N. C. Sou. Reps., Claude B. Iler, P. O. Box 1383, Greenville, S. C.; Luke J. Castile, 515 N. Church St., Charlotte, N. C.; F. M. Wallace, 1115 South 26th St., Birmingham, Ala.

LAW & CO., A. M., Spartanburg, S. C.

LINK-BELT CO., Philadelphia-Chicago, Indianapolis. Sou. Offices: Atlanta Plant, 1116 Murphy Ave., S.W., I. H. Barbee, Mgr.; Baltimore, 913 Lexington Bldg., H. D. Alexander; Dallas Warehouse, 413-15 Second Ave., E. C. Wendell, Mgr.; New Orleans, 614 S. Peters St.

LOPER CO., RALPH E., 500 Woodside Bldg., Greenville, S. C.

MANHATTAN RUBBER MFG. DIV. OF RAYBESTOS-MANHATTAN, Inc., Passaic, N. J. Sou. Offices and Reps.. The Manhattan Rubber Mfg. Div., 1108 N. Fifth Ave., Birmingham, Ala.; Alabama—Anniston, Anniston Hdw. Co.; Birmingham, Crandall Eng. Co. (Special Agent); Birmingham, Long-Lewis Hdw. Co.; Gadsden, Gadsden Hdw. Co.; Huntsville, Noojin Hdw. & Supply Co.; Tuscaloosa, Allen & Jemison Co.; Montgomery, Teague Hdw. Co. Florida—Jacksonville, Cameron & Barkley Co.; Miami, Cameron & Barkley Co.; Tampa, Cameron & Barkley Co. Georgia—Atlanta, Amer. Machinery Co.; Columbus, A. H. Watson (Special Agent); Macon, Bibb Supply Co.; Savannah, D. DeTreville (Special Agent). Kentucky—Ashland, Ben Williamson & Co., Harlan, Kentucky Mine Supply Co.; Louisville, Graft-Pelle Co. North Carolina—Asheville, T. S. Morrison & Co.; Charlotte, Charlotte Supply Co.; Durham, Dillon Supply Co.; Elizabeth City, Elizabeth City Iron Works & Supply Co.; Fayetteville, Huske Hdw. House; Goldsboro, Dewey Bros.; High Point, Kester Machinery Co., and Beeson Hdw. Co.; Lenoir, Bernhardt-Seagle Co.; Gastonia, Gastonia Belting Co.; Raleigh, Dillon Supply Co.; Wilmington, Wilmington Iron Works; Shelby, Shelby Supply Co.; Winston-Salem, Kester Machinery Co. South Carolina—Anderson, Sullivan Hdw. Co.; Charleston, Cameron & Barkley Co.; Clinton, Industrial Supply Co.; Columbia, Columbia Supply Co.; Greenville, Sullivan Hdw. Co.; Sumter, Sumter Machinery Co.; Spartanburg, Montgomery & Crawford. Tennessee—Chattanooga, Chattanooga Belting & Supply Co.; Johnson City, Summers Hdw. Co.; Knoxville, W. J. Savage Co.; Nashville, Buford Bros., Inc. Salesmen—E. H. Olney, 101 Gertrude St., Alta Vista Apts., Knoxville, Tenn.; C. P. Shook, Jr., 1031 N. 30th St., Birmingham, Ala.; B. C. Nabers, 2519 27th Place S., Birmingham, Ala.; R. T. Rutherford, 1318 Harding Place, Charlotte, N. C.

MURRAY LABORATORY, Greenville, S. C.

NATIONAL ANILINE & CHEMICAL CO., 40 Rector St., New York City. Sou. Office and Warehouse, 201 W. First St., Charlotte, N. C.; Julian T. Chase, Res. Mgr.; Kenneth Mackenzie, Asst. to Res. Mgr. Sou. Reps., Dyer S. Moss, A. R. Akerstrom, W. L. Barker, C. E. Blakely, Frank L. Feazle, Charlotte Office; James I. White, Amer. Savings Bk. Bldg., Atlanta, Ga.; H. A. Rodgers, 1004 James Bldg., Chattanooga Tenn.; J. H. Shuford, Harry L. Shinn, 932 Jefferson Standard Life Bldg., Greensboro, N. C.; E. L. Pemberton, 324 Dick St., Fayetteville, N. C.

NATIONAL OIL PRODUCTS CO., Harrison, N. J. Sou. Reps., R. B. MacIntyre, 801 E. Blvd., Charlotte, N. C.; G. H. Small, 799 Argonne Ave., N.E., Atlanta, Ga. Warehouse, Chattanooga, Tenn.

NATIONAL RING TRAVELER CO., 257 W. Exchange St., Providence, R. I. Sou. Office and Warehouse, 131 W. First St., Charlotte, N. C. Sou. Agt., C. D. Taylor, Gaffney, S. C. Sou. Reps., L. E. Taylor, Box 272, Atlanta, Ga.; Otto Pratt, Gaffney, S. C.; H. B. Askew, Box 272, Atlanta, Ga.

N. Y. & N. J. LUBRICANT CO., 292 Madison Ave., New York City. Sou. Office, 601 Kingston Ave., Charlotte, N. C., Lewis W. Thomason, Sou. Dist. Mgr. Sou. Warehouses, Charlotte, N. C., Spartanburg, S. C., New Orleans, La., Atlanta, Ga., Greenville, S. C.

NORLANDER MACHINE CO., New Bedford, Mass. Sou. Plant, 213 W. Long St., Gastonia, N. C.

NORMA-HOFFMANN BEARINGS CORP., Stamford, Conn. Sou. Rep., E. W. Lawrence, 1841 Plaza, Charlotte, N. C.

PARKS-CRAMER CO., Charlotte, N. C., and Fitchburg, Mass.

ONYX OIL & CHEMICAL CO., Jersey City, N. J. Sou. Rep., Edwin W. Klumph, 1716 Garden Terrace, Charlotte, N. C.

PLYMOUTH BOX & PANEL CO. Sales Office, 614 Johnston Bldg., Charlotte, N. C. Sales Staff, E. J. Mueller, C. P. Semmlow. Plant at Plymouth, N. C.

PERKINS & SON, Inc., B. F., Holyoke, Mass.

PRECISION GEAR & MACHINE CO., Inc., Charlotte, N. C.

PRESTON CO., GUSTAVO, 113 Broad St., Boston, Mass. Sou. Reps., A. K. Buxton, P. O. Box 453, Charlotte, N. C.; John P. Batson, P. O. Box 841, Greenville, S. C.

RHOADS & SONS, J. E., 35 N. Sixth St., Philadelphia, Pa. Factory and Tannery, Wilmington, Del.; Atlanta Store, 88 Forsyth St., S.W., Atlanta, Ga.; C. R. Mitchell, Mgr.; Reps., J. W. Mitchell, Box 1589, Greenville, S. C.; L. H. Schwoebel, 864 W. 5th St., Winston-Salem, N. C.; A. S. Jay, 329 West Point St., Roanoke, Ala.

ROHM & HAAS, Inc., Philadelphia, Pa. Sou. Rep., P. H. Del Plaine, 1109 Independence Bldg., Charlotte, N. C.

B. S. ROY & SONS, Worcester, Mass. Sou. Office, 21 Byrd Blvd., Greenville, S. C., John R. Roy, representative.

SACO-LOWELL SHOPS, 147 Milk St., Boston, Mass. Sou. Office and Repair Depot, Charlotte, N. C., Walter W. Gayle, Sou. Agent; Branch Sou. Offices, Atlanta, Ga., John L. Graves, Mgr.; Greenville, S. C.

SEYDEL CHEMICAL CO., Jersey City, N. J. Sou. Rep., Harold P. Goller, Greenville, S. C.; Francis P. Boyer, Lowell, Mass.

SEYDEL-WOOLLEY CO., 748 Rice St., N.W., Atlanta, Ga.

SHERWIN-WILLIAMS CO., THE, Cleveland, O. Sou. Reps., E. H. Stegar, 212 W. First St., Charlotte, N. C.; R. B. Olney, 158 E. Main St., Spartanburg, S. C.; W. O. Masten, 2308 S. Main St., Winston-Salem, N. C.; W. B. McLeod, 245 W. Freemason St., Norfolk, Va.; G. N. Jones, 207 Glascock St., Raleigh, N. C.; John Limbach, 233 Peachtree St., Atlanta, Ga.; D. S. Shimp, 3 Cummins Sts., Nashville, Tenn. Warehouses at Philadelphia, Charlotte, Spartanburg, Atlanta, Columbus, Nashville, Newark and Boston.

SIGNODE STEEL STRAPPING CO., 2600-2620 N. Western Ave., Chicago, Ill. Sou. Warehouses and Offices, Greensboro, N. C., 908 Lakeview St., 'Phone 6935, O. B. Shelton, Rep.; Atlanta, Ga., 113 Courtland St., S.E., A. S. Stephens, Rep.; New Orleans, La., 700 Tchoupitoulas St., P. E. Odenhahl, Rep.

SIPP-EASTWOOD CORP., Paterson, N. J. Sou. Rep., Carolina Specialty Co., Charlotte, N. C.

SOCONY-VACUUM OIL CO., Inc., Southeastern Div. Office, 1602 Baltimore Trust Bldg., Baltimore, Md. Warehouses: Union Storage Warehouse Co., 1000 W. Morehead St., Charlotte, N. C.; Textile Warehouse Co., 511 Rhett St., Greenville, S. C.; South Atlantic Bonded Warehouse Co., Greensboro, N. C.; New South Express Lines, Columbia, S. C.; Terminal Storage Corp., 317 N. 17th St., Richmond, Va.; Taylor Transfer Co., 102 Boush St., Norfolk, Va.

SOLUOL CORP., 123 Georgia Ave., Providence, R. I. Sou. Rep., Eugene J. Adams, Terrace Apts., Anderson, S. C.

SONOCO PRODUCTS CO., Hartsville, S. C.

SOUTHERN SPINDLE & FLYER CO., Charlotte, N. C.

SOUTHERN TEXTILE BANDING MILL, Charlotte, N. C.

STALEY SALES CORP., Decatur, Ill. Sou. Offices, 721 Glenn Bldg., Atlanta, Ga., Wm. H. Randolph, Jr., Sou. Mgr. 812 Montgomery Bldg., Spartanburg, S. C., Geo. A. Dean, Reps., W. T. O'Steen, Greenville, S. C.; John A. Harris, Greensboro, N. C.; R. R. Berry, Atlanta, Ga.; H. A. Mitchell, Birmingham, Ala.

STANLEY WORKS, THE, New Britain, Conn. Sou. Office and Warehouse, 552 Murphy Ave., S.W., Atlanta, Ga. H. C. Jones, Mgr.; Sou. Rep., Horace E. Black, P. O. Box 1484, Charlotte, N. C.

STEEL HEDDLE MFG. CO., 2100 W. Allegheny Ave., Philadelphia, Pa. Sou. Office Plant, 621 E. McBee Ave., Greenville S. C., H. E. Littlejohn and J. J. Kaufman, Jr., Vice-Pres. in charge of reed plant; Atlanta, Ga., H. Ralford Gaffney, 722-723 Forsyth Bldg.; Greensboro, N. C., C. W. Cain.

STEIN, HALL & CO., Inc., 285 Madison Ave., New York City. Sou. Office, Johnston Bldg., Charlotte, N. C., Ira L. Griffin, Mgr.

STERLING RING TRAVELER CO., 101 Lindsey St., Fall River, Mass. Sou. Rep., Geo. W. Walker, P. O. Box 78, Greenville, S. C.

STEWART IRON WORKS, Cincinnati, O. Sales Reps., Peterson-Stewart Fence Construction Co., 241 Liberty St., Spartanburg, S. C.; Fred C. Shaefer, West Point, Ga.; A. E. Sortore, 27 Dartmouth Ave., Avandale Estates, Ga.; Ruff Hdw. Co., 1649 Main St., Columbia, S. C.; Lewis M. Clyburn, Box 388, Lancaster, S. C.; R. E. Davis, P. O. Box 343, Goldsboro, N. C.; Henry D. Bunch, 319 S. Boylan Ave., Raleigh, N. C.; Lewis L. Merritt, Odd Fellows Bldg., Wilmington, N. C.; Edwin C. Bovette, Jr., 1818 Ewing Ave., Charlotte, N. C.; John G. Webb, Hillsboro, N. C.; S. Donaldson Fortson, 648 Broad St., Augusta, Ga.; The Taylor Iron Works & Supply Co., 1014 Broadway, Macon, Ga.; D. E. Kehoe, 412 E. 40th St., Savannah, Ga. Complete sales and erection service available through all of our representatives.

STONE, CHAS. H., Inc., Stone Bldg., Charlotte, N. C.

TERRELL MACHINE CO., Charlotte, N. C. E. A. Terrell, Pres. and Mgr.

TEXAS CO., THE, New York, N. Y. District Offices, Box 901, Norfolk, Va., and Box 1722, Atlanta, Ga. Bulk plants and warehouses in all principal cities. Lubrication Engineers, H. L. Marlow, W. H. Grose, D. L. Keys, Charlotte, N. C.; P. H. Baker, Spartanburg, S. C.

TEXTILE BANKING CO., 55 Madison Ave., New York City.

Sou. Rep., Kenneth A. Durham, 1112 Commercial National Bank Bldg., Charlotte, N. C.

TEXTILE-FINISHING MACHINERY CO., Providence, R. I. Sou. Office, Johnston Bldg., Charlotte, N. C.

TEXTILE SHOP, THE, Franklin St., Spartanburg, S. C. E. J. Eaddy, Sec. and Treas.

TRUSCON LABORATORIES, THE, Detroit, Mich. Sou. Reps., Atlanta, Ga., 324 Marietta St., R. G. Bullard; Birmingham, Ala., Truscon Steel Co., 1105 Martin Bldg.; *Charlotte, N. C., Statesville Road, George Woolley, Jr.; Chattanooga, Tenn., Truscon Steel Co., 903 James Bldg.; Dallas, Tex., 415 Construction Bldg., Truscon Steel Co.; *Houston, Tex., 731 Merchants — Mfrs. Bldg., W. F. Sattler; Jacksonville, Fla., Truscon Steel Co., 3rd and Clark Sts.; Knoxville, Tenn., Truscon Steel Co., 606 Burwell Bldg.; Memphis, Tenn., Truscon Steel Co., 586 Shrine Bldg., New Orleans, La., Truscon Steel Co., 1143 Canal Bank Bldg.; *Norfolk, Va., 22nd & Manteo Sts., W. C. Utley; *Richmond, Va., 736 Central Natl. Bank Bldg., A. P. Long. *Indicates laboratory.

UNIVERSAL WINDING CO., Providence, R. I. Sou. Offices, Charlotte, N. C., Atlanta, Ga.

U. S. GUTTA PERCHA PAINT CO., Providence, R. I. Sou. Fac. Reps., J. S. Palmer, 1207 Woodside Bldg., Greenville, S. C.; L. K. Palmer, 116 S. 13th St., Birmingham, Ala.; L. M. Hardy, 618 S. Mendenhall St., Greensboro, N. C. Sou. Distributors Barreled Sunlight, D. A. Hines, 316 Twelfth St., Lynchburg, Va.; The Henry Walke Co., P. O. Box 1003, Norfolk, Va.; Bullington Paint Co., Inc., Fourth and Broad Sts., Richmond, Va.; Morgan's, Inc., 111 W. Broad St., Savannah, Ga.; Nelson Hdw. Co., 17 Campbell Ave., E. Roanoke, Va.; Atlantic Paint Co., 207 Meeting St., Charleston, S. C.; Pritchard Paint & Glass Co. of Asheville, 77 Patton Ave., Asheville, N. C.; Pritchard Paint & Glass Co., 12 W. 5th St., Charlotte, N. C.; Gate City Paint Co., 110 N. Greene St., Greensboro, N. C.; Montgomery & Crawford, Inc., Spartanburg, S. C.; Chapman Drug Co., 516 State St., Knoxville, Tenn.; The Eason-Morgan Co., 322 Second Ave., N., Nashville, Tenn.; G. & H. Paint & Glass Co., 1016 Broadway, Columbus, Ga.; The Hutchens Co., 100 S. Jefferson St., Huntsville, Ala.; Campbell Coal Co., 236-240 Marietta St., N.W., Atlanta, Ga.; Favrot Roofing & Supply Co., P. O. Box 116, Station G, New Orleans, La.; Standard Bldg. Mat. Co., Inc., 230 21st St., Birmingham, Ala.

U. S. RING TRAVELER CO., 159 Aborn St., Providence, R. I. Sou. Reps., William W. Vaughan, P. O. Box 792, Greenville, S. C.; Oliver B. Land, P. O. Box 158, Athens, Ga.

VEEDER-ROOT, Inc., Hartford, Conn. Sou. Office, Room 1401 Woodside Bldg., Greenville, S. C., Edwin Howard, Sou. Sales Mgr.

VICTOR RING TRAVELER CO., Providence, R. I., with Sou. office and stock room at 137 S. Marietta St., Gastonia, N. C. Also stock room in charge of B. F. Barnes, Jr., Mgr., 1733 Inverness Ave., N.E., Atlanta, Ga.

VISCOSE CO., Johnston Bldg., Charlotte, N. C., Harry L. Dalton, Mgr.

WAK, Inc., Charlotte, N. C. W. A. Kennedy, Pres.; F. W. Warrington, field manager.

WHITIN MACHINE WORKS, Whitinsville, Mass. Sou. Office, Whitin Bldg., Charlotte, N. C., W. H. Porcher and R. I. Dalton, Mgrs.; 1317 Healey Bldg., Atlanta, Ga. Sou. Reps., M. P. Thomas, Charlotte Office; I. D. Wingo and M. J. Bentley, Atlanta Office.

WHITINSVILLE SPINNING RING CO., Whitinsville, Mass. Sou. Rep., W. L. Nicholson, 2119 Conniston Place, Charlotte, N. C.

WILLIAMS & SONS, I. B., Dover, N. H. Sales Reps., C. C. Withington, 710 Woodside Bldg., Greenville, S. C.; R. A. Brand, 213 Johnston Bldg., Charlotte, N. C.

WOLF, JACQUES & CO., Passaic, N. J. Sou. Reps., C. R. Bruning, 1202 W. Market St., Greensboro, N. C.; Walter A. Wood Supply Co., 4517 Rossville Blvd., Chattanooga, Tenn.

GASTONIA, N. C.

(*Continued from Page 23*)

of the employees ,as well as the superintendent and overseers, are tithers. They give one-tenth of their earnings to church and charity.

In the canvass recently for $800 the quota assigned them by Conference, $1,400 was subscribed! The pastor gets a good salary and never has to ask for it. A neat sum has already been sent to the Orphanage for a Thanksgiving offering, and the treasury is by no means empty yet!

Myrtle Mill is nice and clean inside and out, and so are the operatives. There are no better people to be found; none who are more faithful to duty, and who find duty a pleasure—says our good friend, Mr. Z. G. Holtzclaw, carder. —. —. Moore is spinner.

FORT MILL, S. C.

Had a hurried visit here recently at Mill No. 2, where D. L. Thomas is superintendent and getting along nicely.

J. B. Templeton is overseer carding first shift and J. R. Fennell on second shift. Mr. Fennell used to be at Industrial Mill, Rock Hill.

J. B. Broadnax, overseer spinning, has been on the job 17 years; J. N. Simmons is spinner on second shift.

C. D. Turner is overseer of weaving and V. H. Dorsey, master mechanic.

This mill is one of the Springs Mills and has kept pace with the others in this group in modern, improved machinery and everything that goes to make perfect working conditions.

Cotton Roads Again

The completion a few days ago of the "cotton road" near Scott, Mississippi, which was commented on in these columns, has stirred such interest among highway engineers and the general public that the Cotton-Textile Institute has issued a booklet on the subject, entitled "Cotton Farmer-to-Market Roads."

The test project near Scott is a low-cost secondary road. Cotton fabric was used as a reinforcing membrane between the old clay and gravel base and the bituminous top surface.

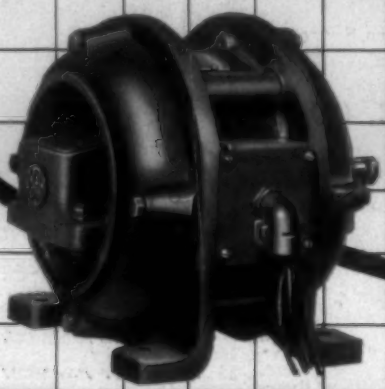
Such construction is not as new as the press reports indicated, the booklet of the Cotton-Textile Institute points out. The first such road was built in South Carolina in 1926. A sample of that surfacing, taken up in June of this year, showed the cotton membrane intact and unimpaired after being down nine years.

Use of cotton is recommended only for bituminous-surfaced secondary roads. Its advantages, summed up by proponents after demonstration in actual service tests, are that it provides a superior integral "road mat;" that it prevents premature raveling, erosion, cracks and other failures of top surface; that it prevents the roadbase substance from forcing its way through the bituminous surface; that it insures greater riding comfort; that it involves no departure from standard methods of construction; that the fabric used is not a patented article and is readily available in quantity from any of hundreds of mills regularly producing coarse cotton goods; that the initial cost of the fabric is more than offset by the economies in maintenance.

Those are broad claims, but they are susceptible of proof or disproof. If the claims are justifiable, a public consumption of hundreds of thousands of bales, with the employment of thousands of textile workers ,should follow immediately in the furtherance of government's road construction program.

It is to be hoped that highway engineers and officials will earnestly investigate the claims and the declarations of the Cotton-Textile Institute. In the result may lie the one most potent factor for the solution of the vexing cotton problem.—*Atlanta Journal.*

Why you can REDUCE WEAVING COSTS WITH THIS LOOM MOTOR



When you install G-E totally enclosed loom motors in your mill, you profit by lower over-all weaving costs because, electrically and mechanically, these motors are designed specifically for loom service. They have high efficiency and power-factor. Ample capacity provides for peak loads and for the breaking-in period and assures cool operation of the motor under normal conditions. As the motor is *totally enclosed*, no dust or lint can enter it. There is no objectionable air discharge near the warp. For further information, address General Electric, Schenectady, N. Y.

CHECK THESE DESIGN FEATURES

They give you exceptional performance, long motor life, and low maintenance

One-piece end shields lower expense of inspecting windings.

Removal permits full inspection of windings without disturbing motor mounting.

Accurately machined for concentric location of rotor.

Vibration-resisting stator keeps winding-repair costs low.

Laminations and frame securely clamped and riveted—cannot shift.

Rigid end frames assure permanent alignment.

Stator-grounding lead provided.

Cast-aluminum rotor reduces rotor service costs.

No joints, no fans—nothing to work loose.

Rotor pressed and keyed on shaft for high mechanical strength.

Waste-packed bearings, accessible from outside, reduce servicing costs.

Large window for proper waste contact on top of shaft.

Removal of end shield unnecessary for examination of waste packing.

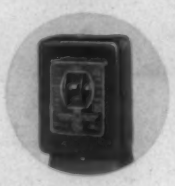
Lubricating system assures long service and low maintenance.

Twin filling holes allow oiling from either side of motor.

Easy to check oil level.

Filling holes—fitted with screw plugs—located so oil cannot overflow into motor.

Drain plug makes flushing and cleaning easy.



Sturdy pedestal-mounted control switch gives long, trouble-free service.

Heavy construction of contacts and moving parts assures long life.

Easily reset overload protection reduces maintenance and time loss.

020-228

GENERAL ELECTRIC